

CONSUMER UNDERSTANDING OF RECYCLING CLAIMS¹

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I. About the Author

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² FTC, *Policy Statement Regarding Advertising Substantiation* (1983), appended to *Thompson Med. Co., Inc.*, 104 F.T.C. 648, 839 (1984), *aff'd*, 791 F.2d 189 (D.C. Cir. 1986), *cert. denied*, 479 U.S. 1086 (1987); FTC, *Policy Statement on Deception* (1983), appended to *Cliffdale Assoc., Inc.*, 103 F.T.C. 110, 174 (1984).

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II. Executive Summary

The survey designed for this matter consists of two samples, each with 400 consumers. Because the FTC evaluates messages “from the perspective of the audience to whom the advertisement is directed,”³ one sample consists of consumers who reported they have or would purchase a product because it or its packaging are recyclable or made from recycled materials. These consumers are likely the intended audience for claims about recycling or recyclability. For comparison, a second sample consists of the general population of U.S. adults aged 18 years and older. Focusing on the intended audience sample, the key results are as follows:

- **Whether plastics are broken down mechanically or chemically, consumers overwhelmingly agree that the use is recycling.** Respondents were presented with descriptions of a variety of uses of materials collected through recycling programs and asked if they would consider the use to be recycling. Among the intended audience, 94.3 percent said they consider it recycling when “Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.” This description was meant to represent traditional recycling of plastics. An almost identical 93.0 percent of the intended audience considered it to be recycling when “Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.” In other words, more than 9 out of 10 consumers consider both traditional and chemical recycling of plastics to be recycling.⁴
- **Even when the end product is something other than plastic, a substantial majority of consumers consider the use to be recycling.** When the use is “Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes,” 83.8 percent say the use is recycling. Even when “Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline,” 79.0 percent say the use is recycling.

³ Pfizer, Inc., 81 F.T.C. 23, 58 (1972).

⁴ Results are slightly lower in the general population, with just under 90 percent considering each use to be recycling. See Table 2 in Section IV.A.

- **Consumers consider mass balance accounting an appropriate basis for labeling recycled content.** The survey described the core concept of mass balance accounting, labeling outputs in proportion to inputs when an output cannot be traced to a specific input, as it applied to three examples. Respondents were asked how appropriate the approach is for marketing/labeling recycled content or renewable energy. A substantial majority of the intended audience (79.0 percent) believe that a mass balance approach to labeling recycled content when plastic waste is mixed with raw materials from fossil fuels is completely or somewhat appropriate. Similarly, 77.5 percent thought a mass balance approach is completely or somewhat appropriate when applied to labeling recycled content when new/raw wood pulp is mixed with recycled paper. Although a majority of the intended audience (61.3 percent) also found the approach completely or somewhat appropriate for marketing of green power, they were more likely to accept the concept for paper or plastic waste.⁵
- **Reducing waste and converting waste into new products or materials were the most frequently cited benefits of recycling.** Respondents selected a wide variety of potential benefits of recycling, with respondents in the intended audience picking an average of 5.7 benefits from the list of 12 response options.⁶ The most popular benefits selected were “Converts waste into new products or materials” (71.3 percent) and “Reduces waste sent to landfills and incinerators” (69.5 percent).⁷
- **“Technically capable of being recycled” is most often chosen as the best definition of “recyclable” among the intended audience.** Although 36.5 percent chose this definition, a majority chose one of two availability-related definitions as the best, either “where facilities are available” (29.5 percent) or “in most places” (23.8 percent). Almost two thirds (66.3 percent) of the

⁵ A substantial majority of the general population also found mass balance accounting completely or somewhat appropriate, though the numbers were smaller than in the intended audience (64.5 percent for plastic, 68.3 percent for paper, and 55.3 percent for green power).

⁶ The corresponding number for the general population was 4.9.

⁷ The corresponding shares for the general population were 62.3 and 62.8 percent, respectively.

intended audience chose “technically capable” as consistent with their understanding of recyclable.⁸

- **Respondents use many sources of information to determine whether an item is recyclable.** The most popular information sources for the intended audience were the material type (74.5 percent), the recycling symbol and code on the product’s packaging (73.5 percent), and claims on the product labeling/packaging (59.5 percent).⁹

III. Survey Methodology

A. Data Collection

The survey instrument was developed and data analysis was conducted in conjunction with NERA. Respondents were recruited for participation from a consumer survey panel maintained by Veridata Insights, a market research firm providing survey programming and data collection services.¹⁰ Respondents who began the survey were “click-balanced,” with Veridata ensuring that the distribution of respondents clicking into the survey matched the U.S. Census distribution on age, gender, and region. The data were collected from February 19 to 26, 2026.

The survey instrument was pretested with ten respondents in three separate rounds between January 28 and February 13, 2026 to ensure that respondents found the survey understandable and were able to provide reliable answers. Pre-test participants completed the survey and answered a series of follow-up questions with a live interviewer from Veridata Insights. Respondents were told that they were free to think aloud while taking the survey or point out anything that was confusing or unclear, and the interviewer asked specifically whether the questions were clear and if not, how they could be clarified. Each round led to slight clarification adjustments to the questionnaire.

⁸ Results were lower in the general population, with 50.8 percent finding “technically capable” consistent with their understanding and 24 percent choosing it as the best option. General population choices of facilities-related responses as the best definition did not differ significantly from the intended audience.

⁹ The shares for the general population were 56.5, 61.0, and 47.0 percent respectively.

¹⁰ See: <https://veridatainsights.com/>.

A total of 800 respondents completed the survey and passed all quality controls.¹¹ One sample of 400 respondents was not subject to screening criteria based on past or future purchases, and instead consists of a general consumer audience of U.S. adults aged 18 years of age or older. Because the FTC evaluates messages “from the perspective of the audience to whom the advertisement is directed,”¹² a second sample of 400 consists of consumers who reported that in the past month they have purchased a product because it or its packaging are recyclable or made from recycled materials, or that they are likely to do so in the next month. These consumers are the relevant audience for claims about recycling or recyclability, and are identified as the intended audience.

B. Survey Universe and Screener

The survey began with a screening instrument to determine if respondents were qualified to complete the main questionnaire. To qualify for the survey, all respondents needed to:

- Report that they were at least 18 years of age;
- Take the survey on a desktop or laptop computer, tablet computer, or mobile phone;
- Provide their gender and age;
- Report that neither they nor any member of their household works for: a market research or advertising company, a trash / recycling company or facility, an oil / gas company, an environmental advocacy group, or indicate they don’t know whether they or any member of their household worked for one of the listed companies / organizations;
- Report they have not taken a survey on recycling in the past 30 days;¹³

¹¹ A total of 2,393 respondents began the survey.

¹² Pfizer, Inc., 81 F.T.C. 23, 58 (1972).

¹³ In addition to respondents who indicated they took a survey on recycling in the past month, respondents who selected “don’t know / unsure” to the question about survey history were also screened out of the survey.

- Pass general quality controls (described in detail in **Exhibit C**).¹⁴

IV. Survey Results

This section presents the survey results, for which tables appear throughout this section. The discussion focuses on results for the intended audience population, noting any statistically significant differences between that sample and the general population sample. A full set of tabulations for the survey questions can be found in **Exhibit A**. The full questionnaire can be seen in **Exhibit B**.

Table 1 presents the age, gender, and region distribution of both survey samples. As shown, both samples had a gender distribution nearing equal, with the intended audience having slightly more males than in the general population. The intended audience also leaned younger than the general population. Both samples approximated the U.S. on regional distribution. (Distributions on race, ethnicity, income, and education are presented in Exhibit A.1.)

Table 1: Respondents' Age, Gender, and Region Distributions

Demographics	Intended Audience		General Population	
	Count	Percent	Count	Percent
<u>Gender</u>				
Male	237	59.3%	181	45.3%
Female	163	40.8%	219	54.8%
<u>Age</u>				
18-34	152	38.0%	62	15.5%
35-54	140	35.0%	143	35.8%
55+	108	27.0%	195	48.8%
<u>Region</u>				
Northeast	84	21.0%	86	21.5%
Midwest	86	21.5%	86	21.5%
South	147	36.8%	157	39.3%
West	83	20.8%	71	17.8%
Total Respondents	400		400	

¹⁴ Exhibit C also reports a more stringent set of quality controls to assess whether the conclusions are sensitive to excluding those respondents. They are not.

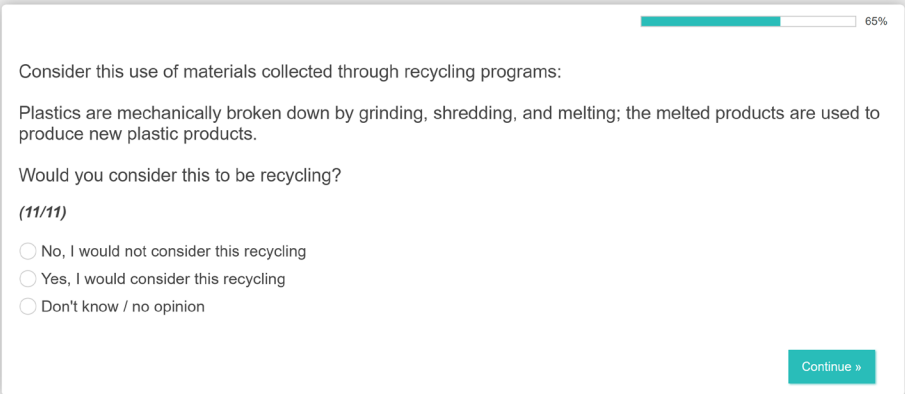
A. What is Recycling?

A key survey objective was to assess consumer perceptions of whether various uses of materials collected in recycling programs in fact constitute recycling. Respondents were provided with the following instructions:

Companies that process materials collected through recycling programs may use the materials collected in different ways. Across the next eleven screens, we will present you with various uses of these materials. Please indicate whether or not you would consider each to be recycling.

Respondents were then shown eleven uses; each was presented in a randomized order and on its own screen. An example of one screen is shown below in **Figure 1**. Respondents were asked if they would consider each to be recycling, with answer options of “Yes, I would consider this recycling,” “No, I would not consider this recycling,” or “Don’t know / no opinion.”¹⁵

Figure 1: Example of Use Question as Seen by Respondents



Consider this use of materials collected through recycling programs:

Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.

Would you consider this to be recycling?

(11/11)

☐ No, I would not consider this recycling

☐ Yes, I would consider this recycling

☐ Don't know / no opinion

[Continue »](#)

[Accessibility Statement - Help](#)

Table 2 below presents the share saying “Yes, I would consider this recycling” to the various statements for the intended audience and the general population. The uses included

¹⁵ Whether the first response was “Yes” or “No” was randomized across respondents but consistent for each respondent.

various traditional recycling procedures. In the intended audience sample, 94.3 percent of respondents said they consider it recycling when “Plastics are *mechanically* broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.”¹⁶ A nearly identical 93.0 percent of respondents in the intended audience considered it recycling when “Plastics are *chemically* broken down into smaller molecules which are used to make plastic pellets to produce new plastic products” (emphasis added in both items). In other words, the vast majority of those who purchase (or are likely to purchase) products because they or their packaging are recyclable or made from recycled materials consider chemical recycling of plastics to be recycling, virtually identical to traditional recycling of plastics. Although agreement that both items are recycling remained quite high, the share saying yes was higher in the intended audience compared to the general population, confirmed by a significance test.

Traditional recycling often involves making a similar product from reclaimed material (i.e., plastic to plastic, or paper to paper). With chemical or advanced recycling, materials may be used to produce a substantially different product, and the survey asked about two such examples. When asked if they consider it recycling when “Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes,” 83.8 percent of the intended audience said yes. When asked if they consider it recycling when “Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline,” 79.0 percent of the intended audience said yes. Therefore, the vast majority of the intended audience also considers these processes to be recycling. For these two items, the general population does not differ significantly from the intended audience.

¹⁶ Two other traditional recycling procedures were included for comparison, and again over 90 percent of the intended audience consider them to be recycling (“Paper is cleaned and dried to create large rolls of paper which are used to make other paper products;” “Glass is mechanically crushed into small pieces, melted, and molded into new glass products.”)

Table 2: Share of Respondents Who Indicated "Yes, I would consider this recycling" to Various Processes

Response	Intended Audience	General Population
<i>Traditional Recycling</i>		
Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.	94.3%*	89.5%
Paper is cleaned and dried to create large rolls of paper which are used to make other paper products.	96.3%*	89.5%
Glass is mechanically crushed into small pieces, melted, and molded into new glass products.	93.8%*	88.3%
Average	94.8%	89.1%
<i>Advanced Recycling</i>		
Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.	93.0%*	86.3%
Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes.	83.8%	79.5%
Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.	79.0%	76.0%
Average	85.3%	80.6%
<i>Not Recycling</i>		
Certain materials such as glass, paper, or plastic are sent to a landfill.	28.0%	32.3%
Certain materials such as glass, paper, or plastic are burned in an incinerator.	30.5%	34.0%
Average	29.3%	33.1%
<i>Other Processes</i>		
Collected materials are burned to produce steam which is used to produce electricity.	65.5%	62.0%
Glass is mechanically crushed into small pieces and used in place of sand or gravel in making concrete or asphalt.	87.8%*	82.3%
Paper is shredded, pulped, and pressed into pellets for use as animal bedding or landscape mulch.	92.5%*	88.3%
Total Respondents	400	400

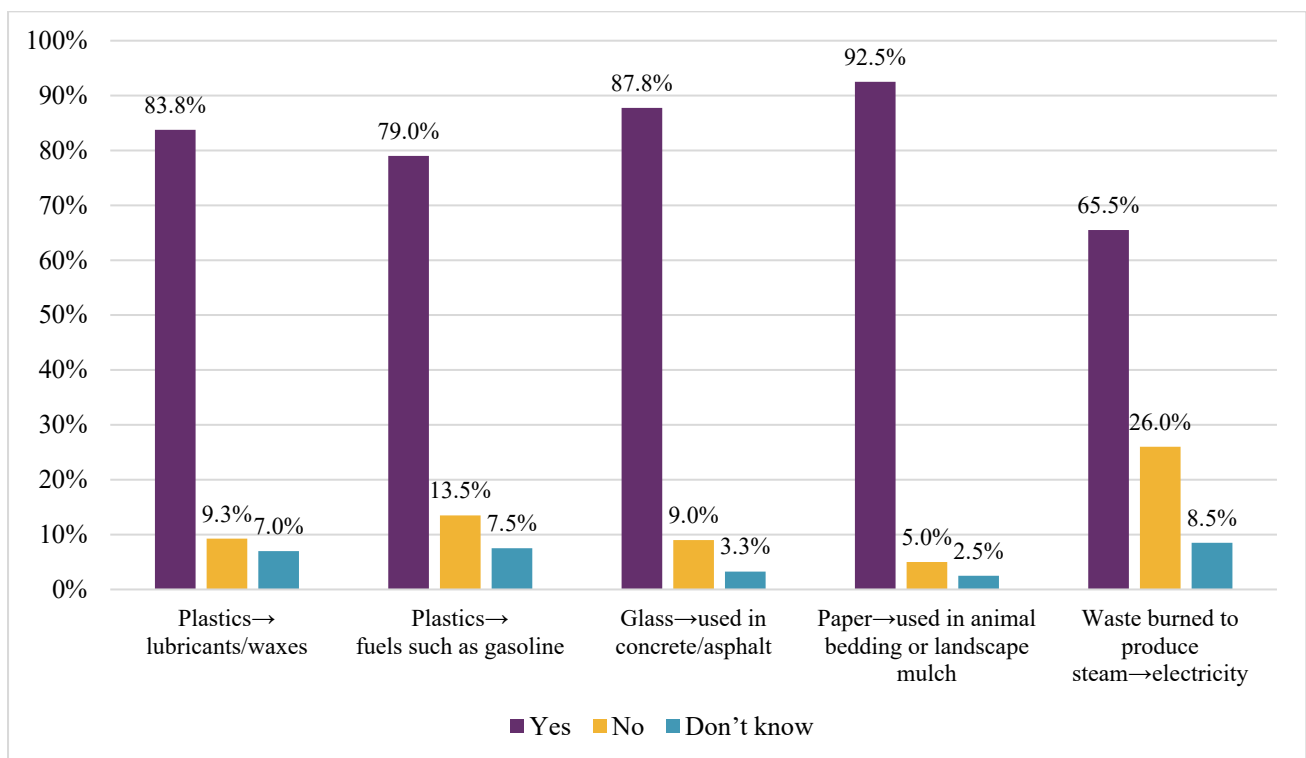
Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q5. Consider this use of materials collected through recycling programs: [INSERT SCENARIO]. Would you consider this to be recycling?

Traditional recycling processes can also begin and end with different materials, and for comparison, the survey also included examples.¹⁷ These results are included in Table 2 and are highlighted below in **Figure 2**. As shown, the vast majority of the intended audience considers processes that turn plastics into lubricants/waxes or fuel, or turn glass into concrete, or turn paper into mulch, to be recycling.¹⁸ Interestingly, respondents are more accepting of converting plastics to fuel as recycling than they are of burning waste to produce steam used to make electricity (79.0 percent for plastics to fuel, compared to 65.5 percent for waste to electricity). Nevertheless, a majority still considers burning materials to produce steam to generate electricity to be recycling.

Figure 2: Whether Intended Audience Considers Various Processes to be Recycling, Starting and Ending with Different Products



Lastly, the survey asked about two items not usually considered to be recycling for use as a comparison point. For both the general population and the intended audience, approximately 30 percent said they consider it to be recycling when “Certain materials such

¹⁷ The exact wording of each item is shown in the “Other Processes” section of **Table 2**.

¹⁸ As Table 2 shows, although agreement remains high, the general population is somewhat less likely to regard glass to concrete or paper to mulch as recycling (82.3 and 88.3 percent, respectively) than the intended audience. Other general population differences on the items shown in Figure 2 are not statistically significant.

as glass, paper, or plastic are sent to a landfill” or “Certain materials such as glass, paper, or plastic are burned in an incinerator.” Responses are slightly lower for each in the intended audience sample, but those differences are not statistically significant. These rates of indicating “yes, I would consider this recycling” are much lower than for any of the other processes asked about in this question series.¹⁹

B. Mass Balance Accounting

In many instances, it is not possible to trace an output back to a particular input used to make it. Perhaps the most straightforward example is renewable electricity: Wind and solar power enter the distribution grid along with electricity generated by fossil fuels, with no way to determine how the electricity delivered to a particular user was actually generated. Similarly, when recycled materials are combined with virgin raw materials, there may be no way to assign particular units of output to either input.

One approach to labeling the outputs in such circumstances is mass balance accounting, which assigns the outputs in proportion to the inputs used to produce them. For example, if solar power generates 1,000 kwh of electricity, green energy companies can market that amount of electricity as solar power, even though the electricity delivered cannot be specifically traced to solar generation. The FTC’s Green Guides recognize this approach, allowing marketers to make unqualified renewable energy claims if they have offset any non-renewable energy use with “renewable energy certificates.”²⁰

The survey presented respondents with descriptions of mass balance or proportional accounting along with informational graphics to help explain the concept before asking their opinions about it.²¹ One scenario addressed marketing green power, and two scenarios addressed labeling recycled products using a mass balance accounting approach. Because it is recognized in the Green Guides and was expected to be more familiar, the renewable energy scenario was presented first. The other two were presented in a randomized order.

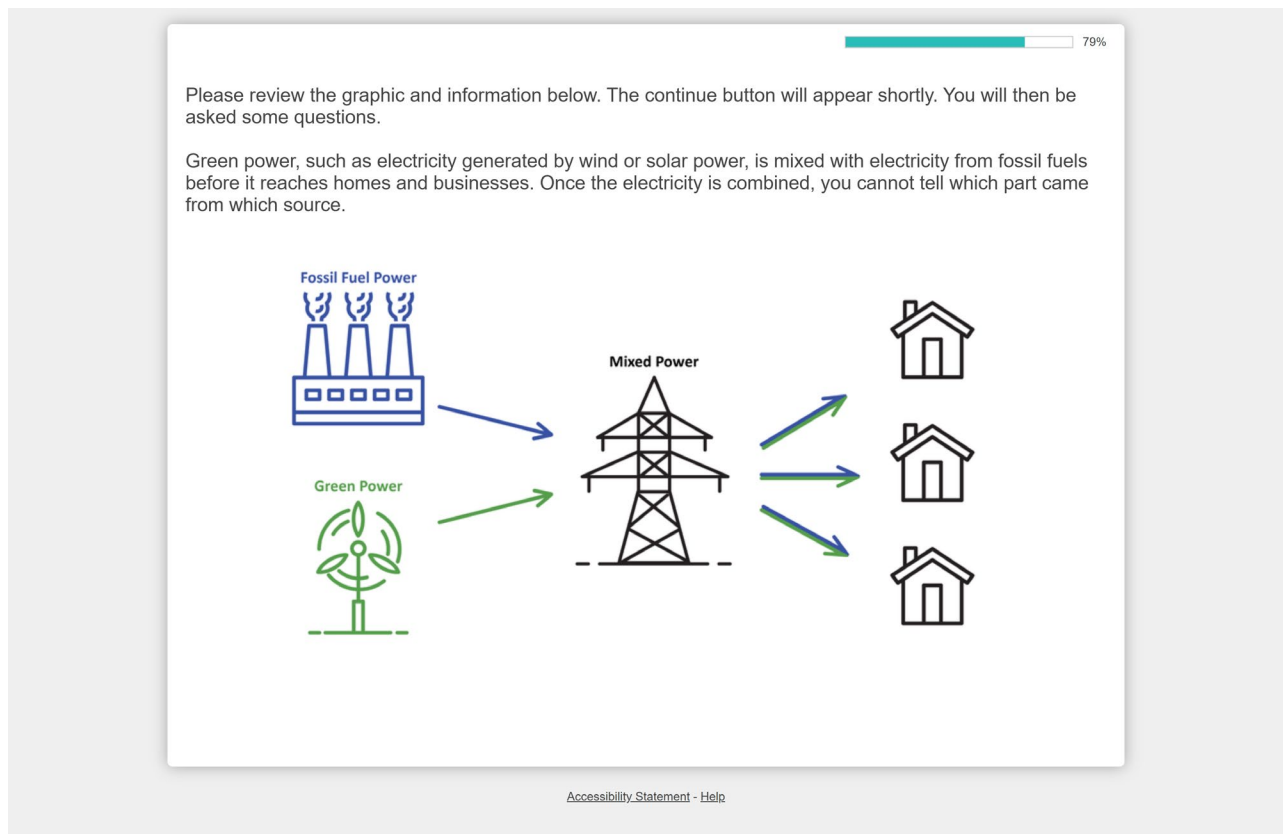
¹⁹ A sensitivity analysis excluded 52 respondents who said all 11 items in the question were recycling, as well as 15 respondents with other data quality issues found that results, shown in Exhibit C, were not materially different.

²⁰ 16 CFR §260.15(a).

²¹ Although the final survey described the concept of mass balance accounting, it did not use that phrase. Respondents in the pretest found it unnecessary as they were able to grasp the concept without the use of the more technical and unfamiliar term.

As shown below in **Figure 3**, respondents were presented with a brief description and an informational graphic to explain the mass balance accounting concept.²²

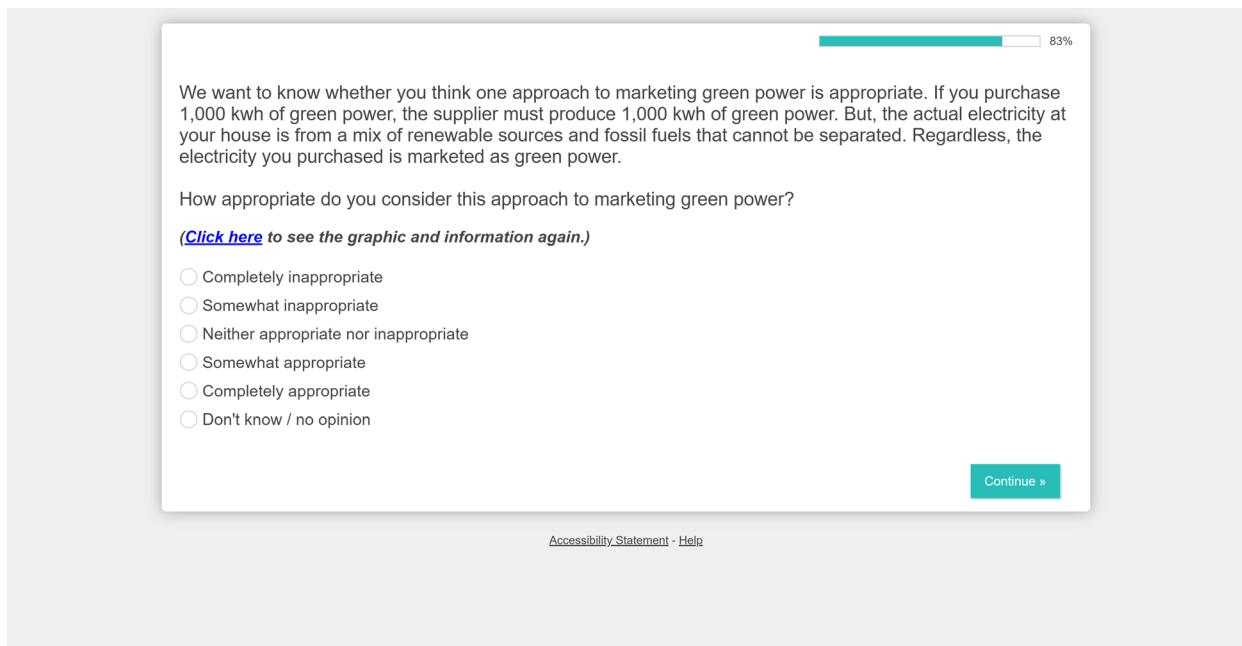
Figure 3: Mass Balance Accounting Illustrative Graphic – Green Power



Following this explanation, respondents were presented with a scenario related to marketing green power and a corresponding question, shown in **Figure 4**. As shown, respondents could choose to click a link to re-open the graphic and explanation. The question asked respondents to rate the appropriateness of this marketing approach using a 5-point scale presented randomly in either ascending or descending order, with response options ranging from “Completely appropriate” to “Completely inappropriate,” plus a “Don’t know / no opinion” option.

²² For this and the subsequent graphic (**Figure 5**), a 10-second delay was enforced before the continue button appeared, to ensure respondents actually reviewed the information before proceeding.

Figure 4: Green Power Scenario as Seen by Respondents



The screenshot shows a survey interface with a progress bar at the top right indicating 83% completion. The main text of the survey question is as follows:

We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

How appropriate do you consider this approach to marketing green power?

[\(Click here to see the graphic and information again.\)](#)

The response options are listed below:

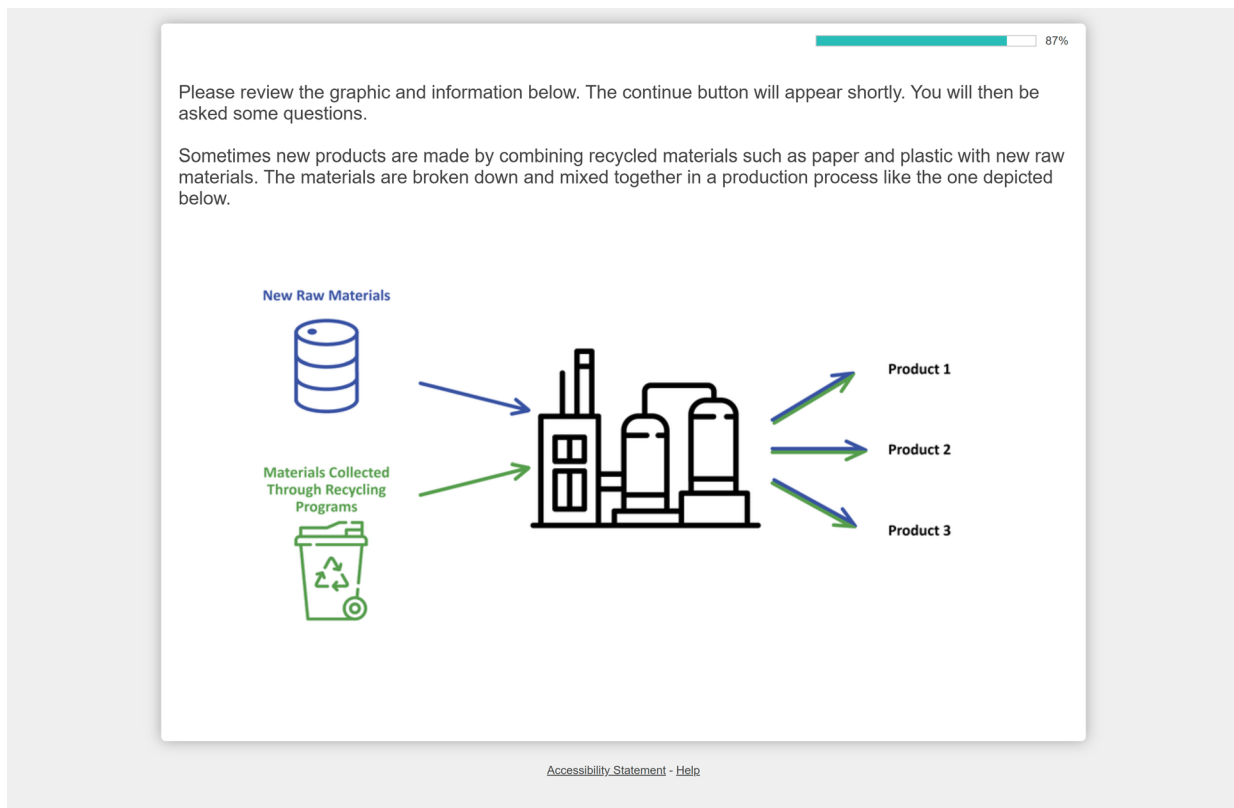
- ☐ Completely inappropriate
- ☐ Somewhat inappropriate
- ☐ Neither appropriate nor inappropriate
- ☐ Somewhat appropriate
- ☐ Completely appropriate
- ☐ Don't know / no opinion

A "Continue »" button is located at the bottom right of the question box. At the very bottom of the page, there is a link for "Accessibility Statement - Help".

Next, respondents were presented with a second illustrative graphic describing the process and explaining mass balance accounting related to combining virgin and recycled materials, shown below in **Figure 5**. Accompanying the graphic was a description of the process. Paralleling the green power scenario, respondents were then asked about mass balance accounting related to recycled paper mixed with virgin wood pulp, and recycled plastic mixed with virgin fossil fuels, again with the option of returning to the graphic and description if they desired. For each scenario, respondents were asked to indicate how appropriate they thought the approach was to labeling recycled content.²³

²³ The order of the paper scenario and the plastics scenario was randomized across respondents. The exact wording of the two questions can be seen in Table 3 and in the questionnaire (Exhibit B).

Figure 5: Mass Balance Accounting Illustrative Graphic – Recycled Materials



These results are summarized below in **Table 3**. A substantial majority, 79.0 percent, of the intended audience indicated that a mass balance approach is completely or somewhat appropriate for a process that mixes four pounds of plastic waste with six pounds of fossil fuels to produce four pounds of new products that could be labeled as recycled content. Similarly, 77.5 percent of the intended audience said that a mass balance approach applied to raw wood pulp mixed with recycled paper is completely or somewhat appropriate. Interestingly, these shares are higher than the 61.3 percent who said that a mass balance approach is completely or somewhat appropriate for marketing green power. Although a majority of the general population also agreed that each of the three scenarios was appropriate, agreement was statistically significantly lower than in the intended audience for the two recycled content scenarios.

Table 3: Share of Respondents Finding Mass Balance Accounting Approaches Appropriate

Response	Green Power		Raw Wood Pulp and Recycled Paper		Plastic Waste and Fossil Fuels	
	Intended Audience	General Population	Intended Audience	General Population	Intended Audience	General Population
Share selecting "Completely appropriate" or "Somewhat appropriate"	61.3%	55.3%	77.5%*	68.3%	79.0%*	64.5%
Total Respondents	400	400	400	400	400	400

Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q14. We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

How appropriate do you consider this approach to marketing green power?

Q15. If six pounds of new/raw wood pulp are combined with four pounds of material from recycled paper, only four pounds of the end product could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Table 4 shows the full distribution of responses for a mass balance approach to producing plastic products labeled as recycled content specifically. In the intended audience sample, 38.0 percent of respondents said it was completely appropriate and 41.0 percent said it was somewhat appropriate.²⁴

²⁴ The full distributions for the other questions can be seen in Exhibit A.12 and A.13.

**Table 4: How Appropriate Respondents Find Approach to Labeling Recycled Content:
Plastic Waste and Fossil Fuels**

Response	Intended Audience		General Population	
	Count	Percent	Count	Percent
<i>Total completely or somewhat appropriate</i>	316	79.0%*	258	64.5%
Completely appropriate	152	38.0%	119	29.8%
Somewhat appropriate	164	41.0%	139	34.8%
Neither appropriate nor inappropriate	34	8.5%	63	15.8%
Somewhat inappropriate	26	6.5%	43	10.8%
Completely inappropriate	13	3.3%	11	2.8%
Don't know / no opinion	11	2.8%	25	6.3%
Total Respondents	400	100.0%	400	100.0%

Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions for the comparison of the combined percentage of "completely" and "somewhat" appropriate. Only this combined percentage was tested.

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated. How appropriate do you consider this approach to labeling recycled content?

C. Other Topics

The survey addressed three other topics relevant to recycling and recyclability. Respondents were asked about the benefits of recycled products, about what “recyclable” means to them, and about the information sources they use to determine whether a product is recyclable.

1. Benefits of Recycling

Table 5 shows the results for the benefits of recycling. Respondents were asked to choose any of 11 possible benefits of recycled products, and could also select an option for “Other” and enter their own response.²⁵ The results show that respondents believe there are many different benefits to recycled products. The average respondent in the intended audience selected 5.7 items of 12.²⁶ The most popular benefits selected amongst the intended audience were “Converts waste into new products or materials” (71.3 percent), “Reduces waste sent to landfills and incinerators” (69.5 percent), “Decrease pollution and greenhouse

²⁵ “None of the above” and “Don’t know / unsure” were additional response options.

²⁶ The corresponding number for the general population was 4.9.

gas emissions associated with manufacturing” (59.5 percent), and “Reduces use of raw / natural resources (e.g., timber, petroleum, minerals)” (56.8 percent). Although the general population was less likely to select most individual benefits, there was considerable overlap in the most commonly identified benefits in each sample. For the general population, the top three choices were reducing waste (62.8 percent), converting waste into new products / materials (62.3 percent), and reduced use of raw materials (51.8 percent).

Table 5: Respondents' Perceptions of Benefits of Recycled Products

Response	Intended Audience		General Population	
	Count	Percent ¹	Count	Percent ¹
Converts waste into new products or materials	285	71.3% *	249	62.3%
Reduces waste sent to landfills and incinerators	278	69.5% *	251	62.8%
Decrease pollution and greenhouse gas emissions associated with manufacturing	238	59.5% *	196	49.0%
Reduces use of raw / natural resources (e.g., timber, petroleum, minerals)	227	56.8%	207	51.8%
Conservation of wildlife and habitats	221	55.3% *	180	45.0%
Encourages companies to adopt more sustainable practices	213	53.3% *	166	41.5%
Supports local recycling industries and creates jobs	204	51.0% *	171	42.8%
Lowers energy consumption compared to producing new materials from raw resources	195	48.8%	171	42.8%
Aligns with personal values	167	41.8% *	138	34.5%
They offer a good value or cost savings	132	33.0%	123	30.8%
Products are more durable or longer-lasting	119	29.8% *	94	23.5%
Other	0	0.0%	0	0.0%
None of the above	0	0.0% *	13	3.3%
Don't know / unsure	1	0.3% *	10	2.5%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q13. You may have already mentioned this, but which of the following, if any, are benefits of recycled products?

2. Meaning of “Recyclable”

Respondents were presented with a list of four options for defining “recyclable” displayed in randomized order²⁷ and asked to select which statements are consistent with

²⁷ “None of the above” and “Don’t know / unsure” were additional response options.

their understanding of what it means when a product is “recyclable.” They were then asked to identify which of the options “best” describes what “recyclable” means. Results for both questions are shown below in **Table 6**.

Table 6: Respondents' Understanding of What it Means When a Product Is "Recyclable"

Response	Best Definition (Q8) ¹		Consistent (Q7) ²	
	Intended Audience	General Population	Intended Audience	General Population
Technically capable of being recycled	36.5%*	24.0%	66.3%*	50.8%
Can be recycled where facilities are available	29.5%	29.3%	71.3%*	57.8%
Can be recycled in most places	23.8%	25.5%	58.5%	53.0%
Only certain parts or components may be recyclable	9.3%	11.5%	44.0%*	35.3%
Don't know / unsure	0.3%	1.5%	0.5%*	4.5%
None of the above ³	--	--	0.3%*	3.8%
Total Respondents	400	400	400	400

Notes:

¹ Respondents who selected "none of these" or "don't know / unsure" at Q7 were not asked Q8 and are missing from the Q8 columns here, so percent does not sum to 100. Respondents who selected only one response option at Q7 were not asked Q8, but are reflected as indicating the response option they selected at Q7 best describes what "recyclable" means.

² Percent does not sum to 100 because respondents could select multiple options at Q7.

³ "None of the above" was not an option at Q8.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q7. You may have already mentioned this, but which of the following, if any, are consistent with your understanding of what it means when a product is “recyclable”?

*Q8. You indicated the following are consistent with your understanding of what it means when a product is “recyclable.” Which of these **best** describes what it means?*

Among the intended audience, a majority chose one of two availability-related definitions as the best, with 29.5 percent choosing “where facilities are available” and 23.8 percent choosing “in most places,” with similar results in the general population. For the intended audience the most popular choice for the best definition was “Technically capable of being recycled,” chosen by 36.5 percent, significantly more than in the general population (24.0 percent). Two thirds (66.3 percent) of the intended audience found this definition consistent with their understanding, significantly more than in the general population (50.8 percent). Even more (71.3 percent) found “where facilities are available” consistent, again significantly more than the general population (57.8 percent). The survey also found that recycling programs are in fact widely available. In the intended audience sample, 76.8 percent reported that a curbside or communal recycling program was available in their

community,²⁸ 70.8 percent had used such a program,²⁹ and for 69.8 percent the program accepted plastics.³⁰ All three responses were significantly higher than the general population, where 59 percent reported access, 53 percent reported use, and 50.5 percent reported the available program accepted plastics.

3. Information Sources

Lastly, the survey also asked questions about what information sources respondents consult when determining if something is recyclable. These results are presented below in **Table 7**. Respondents were asked to choose from a list of 8 items which they rely upon, plus an “other” option.³¹ On average, the intended audience selected 3.4 of the 9 items, indicating they tend to consult multiple information sources.³² In the intended audience sample, the most popular answer was “Material type (e.g., plastic, cardboard, glass, aluminum),” with 74.5 percent selecting that from the list. Similarly, 73.5 percent selected “Recycling symbol and code on product’s packaging,” 59.5 percent selected “Claims on product labeling/packaging,” and 45.5 percent selected “Local government or waste management website, flyer, or other communication.” The percentage choosing any given option was generally lower in the general population, in part because 10.8 percent do not recycle and were therefore not asked about information sources (compared to only 2 percent in the intended audience sample).

²⁸ See Exhibit A.3 for details.

²⁹ See Exhibit A.4 for details.

³⁰ See Exhibit A.6 for details.

³¹ “None of the above” and “Don’t know / unsure” were additional response options.

³² The average in the general population was 2.7.

Table 7: Information Respondents Consult to Determine Whether an Item Is Recyclable

Response	Intended Audience		General Population	
	Count	Percent ¹	Count	Percent ¹
Material type (e.g., plastic, cardboard, glass, aluminum)	298	74.5% *	226	56.5%
Recycling symbol and code on product's packaging	294	73.5% *	244	61.0%
Claims on product labeling/packaging	238	59.5% *	188	47.0%
Local government or waste management website, flyer, or other communication	182	45.5%	159	39.8%
Product's website	105	26.3%	87	21.8%
Other online resources (e.g., Google search, AI, social media)	99	24.8% *	64	16.0%
Advertising for the product	78	19.5%	70	17.5%
Consult friends / family	70	17.5%	55	13.8%
Other	5	1.3%	2	0.5%
None of the above	9	2.3%	9	2.3%
Don't know / unsure	1	0.3% *	7	1.8%
Not asked ²	8	2.0%	43	10.8%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

² Respondents who indicated they do not recycle at Q9 were not asked Q10. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q10. You may have already mentioned this, but what type(s) of information, if any, do you consult to determine whether an item is recyclable?

V. Conclusions

The survey results indicate that whether plastics are broken down mechanically or chemically, consumers overwhelmingly agree that the use is recycling. Even when the end product is something other than plastic, including lubricants and waxes or fuels, a substantial majority of consumers consider the use to be recycling.

In addition, consumers consider mass balance accounting an appropriate basis for labeling recycled content. There is more consumer acceptance of this approach for recycled content than for the very similar use of the concept in marketing renewable energy, a use the existing Green Guides find appropriate.

Consumers see many benefits of recycling. Reducing waste and converting waste into new products or materials were the most frequently cited benefits.

“Technically capable of being recycled” is most often chosen as the best definition of “recyclable” among the intended audience. Although 36.5 percent chose this definition, a majority chose one of two availability-related definitions as the best, either “where facilities are available” (29.5 percent) or “in most places” (23.8 percent). Lastly, respondents use many sources of information to determine whether an item is recyclable.

Exhibit A

Exhibit A.1
Description of Survey Sample

Demographics	Intended Audience		General Population	
	Count	Percent	Count	Percent
<u>Gender (S4)</u>				
Male	237	59.3% *	181	45.3%
Female	163	40.8% *	219	54.8%
<u>Age (S5)</u>				
18-34	152	38.0% *	62	15.5%
35-54	140	35.0%	143	35.8%
55+	108	27.0% *	195	48.8%
<u>Region (S6)</u>				
Northeast	84	21.0%	86	21.5%
Midwest	86	21.5%	86	21.5%
South	147	36.8%	157	39.3%
West	83	20.8%	71	17.8%
<u>Race¹ (S8)</u>				
White / Caucasian	300	75.0% *	328	82.0%
Black or African American	70	17.5% *	49	12.3%
Asian	28	7.0% *	12	3.0%
Native Hawaiian or Pacific Islander	3	0.8%	1	0.3%
American Indian or Alaskan Native	4	1.0%	8	2.0%
Other	5	1.3%	10	2.5%
Prefer not to answer	0	0.0%	2	0.5%
<u>Hispanic/Latino Origin (S9)</u>				
Hispanic / Latino	66	16.5% *	42	10.5%
Non-Hispanic / Latino	333	83.3% *	354	88.5%
Other	1	0.3%	1	0.3%
Prefer not to answer	0	0.0%	3	0.8%
Total Respondents	400		400	

Notes:

¹ Percent does not sum to 100 because respondents could select multiple response options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Exhibit A.1
Description of Survey Sample

Demographics	Intended Audience		General Population	
	Count	Percent	Count	Percent
<u>Household Income (S10)</u>				
Less than \$25,000	43	10.8% *	84	21.0%
\$25,000 – \$49,999	73	18.3%	84	21.0%
\$50,000 – \$69,999	69	17.3%	63	15.8%
\$70,000 – \$99,999	75	18.8% *	49	12.3%
\$100,000 – \$149,999	80	20.0%	60	15.0%
More than \$150,000	59	14.8%	52	13.0%
Don't know / unsure	1	0.3%	3	0.8%
Prefer not to answer	0	0.0% *	5	1.3%
<u>Highest Educational Degree (S11)</u>				
Less than high school	2	0.5% *	10	2.5%
High school graduate (including GED or alternative credential)	91	22.8%	95	23.8%
Some college, no degree	70	17.5%	81	20.3%
Associate's degree	40	10.0%	38	9.5%
Bachelor's degree	130	32.5%	105	26.3%
Graduate or professional degree	67	16.8%	70	17.5%
Prefer not to answer	0	0.0%	1	0.3%
<u>Device (S2)</u>				
Desktop computer	108	27.0% *	75	18.8%
Laptop computer	120	30.0% *	94	23.5%
Tablet	24	6.0%	34	8.5%
Mobile phone	148	37.0% *	197	49.3%
Total Respondents	400		400	

Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Exhibit A.2
Whether Respondents Have Purchased or Are Likely to Purchase Any Products Because Product or Packaging Was Made From Recycled Materials and/or is Recyclable (S14 & S15)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Unique selections of the below	400	100.0%	220	55.0% *
Made from recycled materials - <i>past month</i>	216	54.0%	105	26.3% *
Recyclable - <i>past month</i>	282	70.5%	144	36.0% *
Made from recycled materials - <i>next month</i>	253	63.3%	121	30.3% *
Recyclable - <i>next month</i>	323	80.8%	170	42.5% *
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

S14. In the past month, have you purchased any products, partly because the product or its packaging was any of the following?

S15. In the next month, are you likely to purchase any products, partly because the product or its packaging is any of the following?

Exhibit A.3
What Types of Recycling Programs Are Available to Respondents (Q1)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Curbside or communal recycling programs (i.e., residents place recyclable materials in designated bins or carts for scheduled collection)	307	76.8% *	236	59.0%
Drop-off recycling program (i.e., residents bring recyclables to designated collection sites)	269	67.3% *	191	47.8%
Specialized recycling programs/events (e.g., electronics, hazardous waste collection, batteries, textiles, tires, etc.)	204	51.0% *	127	31.8%
Recycling buy-back program (i.e., receive cash for bringing recyclable materials to designated facilities/centers)	147	36.8% *	86	21.5%
Other	1	0.3%	1	0.3%
None of the above	4	1.0% *	46	11.5%
Don't know / unsure	12	3.0%	20	5.0%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q1. If you know, what type(s) of recycling program(s) is/are available to you in your city/town/local municipality?

Exhibit A.4
Recycling Programs Respondents Have Used (Q2)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Curbside or communal recycling programs (i.e., residents place recyclable materials in designated bins or carts for scheduled collection)	283	70.8% *	212	53.0%
Drop-off recycling program (i.e., residents bring recyclables to designated collection sites)	210	52.5% *	139	34.8%
Specialized recycling programs/events (e.g., electronics, hazardous waste collection, batteries, textiles, tires, etc.)	155	38.8% *	88	22.0%
Recycling buy-back program (i.e., receive cash for bringing recyclable materials to designated facilities/centers)	108	27.0% *	66	16.5%
Other	1	0.3%	0	0.0%
None of the above	4	1.0% *	14	3.5%
Don't know / unsure	0	0.0%	4	1.0%
Not asked ²	16	4.0%	66	16.5%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

² Respondents who answered "none of these" or "don't know / unsure" at Q1 were not asked Q2. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q2. You indicated the following types of recycling program(s) is/are available to you in your city/town/local municipality. Which of the following offered recycling program(s) have you ever used?

Exhibit A.5
Share of Respondents Who Consider Various Processes to Be Recycling (Q5)

Response	Intended Audience			General Population		
	Yes ¹	No	Don't know	Yes ¹	No	Don't know
<i>Traditional Recycling</i>						
Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.	94.3% *	4.8%	1.0%	89.5%	5.3%	5.3%
Paper is cleaned and dried to create large rolls of paper which are used to make other paper products.	96.3% *	2.3%	1.5%	89.5%	6.8%	3.8%
Glass is mechanically crushed into small pieces, melted, and molded into new glass products.	93.8% *	5.0%	1.3%	88.3%	7.0%	4.8%
Average	94.8%			89.1%		
<i>Advanced Recycling</i>						
Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.	93.0% *	5.3%	1.8%	86.3%	8.0%	5.8%
Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes.	83.8%	9.3%	7.0%	79.5%	12.5%	8.0%
Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.	79.0%	13.5%	7.5%	76.0%	13.3%	10.8%
Average	85.3%			80.6%		
<i>Not Recycling</i>						
Certain materials such as glass, paper, or plastic are sent to a landfill.	28.0%	68.3%	3.8%	32.3%	61.8%	6.0%
Certain materials such as glass, paper, or plastic are burned in an incinerator.	30.5%	66.5%	3.0%	34.0%	57.8%	8.3%
Average	29.3%			33.1%		
<i>Other Processes</i>						
Collected materials are burned to produce steam which is used to produce electricity.	65.5%	26.0%	8.5%	62.0%	23.5%	14.5%
Glass is mechanically crushed into small pieces and used in place of sand or gravel in making concrete or asphalt.	87.8% *	9.0%	3.3%	82.3%	10.0%	7.8%
Paper is shredded, pulped, and pressed into pellets for use as animal bedding or landscape mulch.	92.5% *	5.0%	2.5%	88.3%	6.3%	5.5%
Total Respondents	400			400		

Notes:

¹ The full response options were "Yes, I would consider this recycling," "No, I would not consider this recycling," and "Don't know / no opinion."

* Indicates the comparison between General Population and the Intended Audience who selected the "Yes" option is significantly different at p<0.05 using a two-tailed z-test of proportions.

Q5. Consider this use of materials collected through recycling programs: [INSERT SCENARIO]. Would you consider this to be recycling?

Exhibit A.6
Materials Accepted By Respondents' Curbside / Communal Recycling Program (Q6)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Paper/cardboard	281	70.3% *	207	51.8%
Plastics	279	69.8% *	202	50.5%
Glass	237	59.3% *	173	43.3%
Aluminum	215	53.8% *	158	39.5%
Batteries and electronics	85	21.3%	71	17.8%
Clothing and textiles	93	23.3% *	60	15.0%
Hazardous waste	39	9.8%	36	9.0%
Other	3	0.8%	2	0.5%
None of the above	0	0.0%	3	0.8%
Don't know / unsure	2	0.5%	3	0.8%
Not asked ²	93	23.3%	164	41.0%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

² Only respondents who indicated at Q1 that their city/town/local municipality has a curbside or communal recycling program were asked Q6. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q6. You indicated your city/town/local municipality has a curbside or communal recycling program. Which of the following materials, if any, does your curbside / communal recycling program accept?

Exhibit A.7
Respondents' Understanding of What it Means When a Product Is "Recyclable" (Q7)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Technically capable of being recycled	265	66.3% *	203	50.8%
Can be recycled where facilities are available	285	71.3% *	231	57.8%
Can be recycled in most places	234	58.5%	212	53.0%
Only certain parts or components may be recyclable	176	44.0% *	141	35.3%
None of the above	1	0.3% *	15	3.8%
Don't know / unsure	2	0.5% *	18	4.5%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q7. You may have already mentioned this, but which of the following, if any, are consistent with your understanding of what it means when a product is "recyclable"?

Exhibit A.8
Respondents' Best Understanding of What it Means When a Product Is "Recyclable" (Q8)

Response¹	Intended Audience		General Population	
	Count	Percent	Count	Percent
Technically capable of being recycled	146	36.5%*	96	24.0%
Can be recycled where facilities are available	118	29.5%	117	29.3%
Can be recycled in most places	95	23.8%	102	25.5%
Only certain parts or components may be recyclable	37	9.3%	46	11.5%
Don't know / unsure	1	0.3%	6	1.5%
Not asked ²	3	0.8%	33	8.3%
Total Respondents	400	100.0%	400	100.0%

Notes: ¹ Respondents who selected only one response option at Q7 were not asked Q8, but are reflected above as indicating that one response option best describes what "recyclable" means (as they selected only this option at Q7).

² Respondents who selected "none of these" or "don't know / unsure" at Q7 were not asked Q8. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

*Q8. You indicated the following are consistent with your understanding of what it means when a product is "recyclable." Which of these **best** describes what it means.*

Exhibit A.9 (Report Table 7)
Information Respondents Consult to Determine Whether an Item Is Recyclable (Q10)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Material type (e.g., plastic, cardboard, glass, aluminum)	298	74.5% *	226	56.5%
Recycling symbol and code on product's packaging	294	73.5% *	244	61.0%
Claims on product labeling/packaging	238	59.5% *	188	47.0%
Local government or waste management website, flyer, or other communication	182	45.5%	159	39.8%
Product's website	105	26.3%	87	21.8%
Other online resources (e.g., Google search, AI, social media)	99	24.8% *	64	16.0%
Advertising for the product	78	19.5%	70	17.5%
Consult friends / family	70	17.5%	55	13.8%
Other	5	1.3%	2	0.5%
None of the above	9	2.3%	9	2.3%
Don't know / unsure	1	0.3% *	7	1.8%
Not asked ²	8	2.0%	43	10.8%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

² Respondents who indicated they do not recycle at Q9 were not asked Q10. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q10. You may have already mentioned this, but what type(s) of information, if any, do you consult to determine whether an item is recyclable?

Exhibit A.10
Primary / Most Important Source of Information Respondents
Consult to Determine Whether an Item Is Recyclable (Q11)

Response¹	Intended Audience		General Population	
	Count	Percent	Count	Percent
Recycling symbol and code on product's packaging	148	37.0%	122	30.5%
Material type (e.g., plastic, cardboard, glass, aluminum)	93	23.3%	83	20.8%
Local government or waste management website, flyer, or other communication	57	14.3%	56	14.0%
Claims on product labeling/packaging	43	10.8%	41	10.3%
Product's website	11	2.8%	14	3.5%
Other online resources (e.g., Google search, AI, social media)	9	2.3%	12	3.0%
Consult friends / family	9	2.3%	8	2.0%
Advertising for the product	5	1.3%	5	1.3%
Other	5	1.3% *	0	0.0%
Don't know / unsure	2	0.5%	0	0.0%
Not asked ²	18	4.5%	59	14.8%
Total Respondents	400	100.0%	400	100.0%

Notes: ¹ Respondents who selected only one source of information at Q10 were not asked Q11, but are reflected above as indicating that one source of information is their primary / most important source (as they indicated this was the only important source of information at the prior question).

² Respondents who indicated they do not recycle at Q9 were not asked Q11, nor were respondents who selected "none of these" or "don't know / unsure" at Q10. This figure was not tested for statistical significance.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q11. You indicated you consult the following type(s) of information to determine whether an item is recyclable. Which of the following type(s) of information is your primary or most important source of information to determine whether an item is recyclable?

Exhibit A.11 (Report Table 5)
Respondents' Perceptions of Benefits of Recycled Products (Q13)

Response	Intended Audience		General Population	
	Count	Percent¹	Count	Percent¹
Converts waste into new products or materials	285	71.3% *	249	62.3%
Reduces waste sent to landfills and incinerators	278	69.5% *	251	62.8%
Decrease pollution and greenhouse gas emissions associated with manufacturing	238	59.5% *	196	49.0%
Reduces use of raw / natural resources (e.g., timber, petroleum, minerals)	227	56.8%	207	51.8%
Conservation of wildlife and habitats	221	55.3% *	180	45.0%
Encourages companies to adopt more sustainable practices	213	53.3% *	166	41.5%
Supports local recycling industries and creates jobs	204	51.0% *	171	42.8%
Lowers energy consumption compared to producing new materials from raw resources	195	48.8%	171	42.8%
Aligns with personal values	167	41.8% *	138	34.5%
They offer a good value or cost savings	132	33.0%	123	30.8%
Products are more durable or longer-lasting	119	29.8% *	94	23.5%
Other	0	0.0%	0	0.0%
None of the above	0	0.0% *	13	3.3%
Don't know / unsure	1	0.3% *	10	2.5%
Total Respondents	400		400	

Notes: ¹ Percent does not sum to 100 because respondents could select multiple options.

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions.

Q13. You may have already mentioned this, but which of the following, if any, are benefits of recycled products?

Exhibit A.12
How Appropriate Respondents Find Approach to Marketing Green Power (Q14)

Response	Intended Audience		General Population	
	Count	Percent	Count	Percent
<i>Total completely or somewhat appropriate</i>	245	61.3%	221	55.3%
Completely appropriate	106	26.5%	92	23.0%
Somewhat appropriate	139	34.8%	129	32.3%
Neither appropriate nor inappropriate	45	11.3%	51	12.8%
Somewhat inappropriate	61	15.3%	58	14.5%
Completely inappropriate	36	9.0%	36	9.0%
Don't know / no opinion	13	3.3%	34	8.5%
Total Respondents	400	100.0%	400	100.0%

Note:

The comparison between General Population and the Intended Audience is not significantly different at $p < 0.05$ using a two-tailed z-test of proportions for the combined percentage of "completely" and "somewhat" appropriate. Only this combined percentage was tested.

Q14. We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

How appropriate do you consider this approach to marketing green power?

Exhibit A.13
How Appropriate Respondents Find Approach to Labeling Recycled Content:
New / Raw Wood Pulp and Recycled Paper (Q15)

Response	Intended Audience		General Population	
	Count	Percent	Count	Percent
<i>Total completely or somewhat appropriate</i>	310	77.5%*	273	68.3%
Completely appropriate	147	36.8%	124	31.0%
Somewhat appropriate	163	40.8%	149	37.3%
Neither appropriate nor inappropriate	35	8.8%	61	15.3%
Somewhat inappropriate	32	8.0%	30	7.5%
Completely inappropriate	13	3.3%	11	2.8%
Don't know / no opinion	10	2.5%	25	6.3%
Total Respondents	400	100.0%	400	100.0%

Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions for the comparison of the combined percentage of "completely" and "somewhat" appropriate. Only this combined percentage was tested.

Q15. If six pounds of new/raw wood pulp are combined with four pounds of material from recycled paper, only four pounds of the end product could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Exhibit A.14 (Report Table 4)
How Appropriate Respondents Find Approach to Labeling Recycled Content:
Plastic Waste and Fossil Fuels (Q16)

Response	Intended Audience		General Population	
	Count	Percent	Count	Percent
<i>Total completely or somewhat appropriate</i>	316	79.0%*	258	64.5%
Completely appropriate	152	38.0%	119	29.8%
Somewhat appropriate	164	41.0%	139	34.8%
Neither appropriate nor inappropriate	34	8.5%	63	15.8%
Somewhat inappropriate	26	6.5%	43	10.8%
Completely inappropriate	13	3.3%	11	2.8%
Don't know / no opinion	11	2.8%	25	6.3%
Total Respondents	400	100.0%	400	100.0%

Note:

* Indicates the comparison between General Population and the Intended Audience is significantly different at $p < 0.05$ using a two-tailed z-test of proportions for the comparison of the combined percentage of "completely" and "somewhat" appropriate. Only this combined percentage was tested.

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Exhibit B

Recycling Survey

[PROGRAMMER NOTES IN BOLD CAPS AND BRACKETS]

Notes to respondent in italics

Overview

Sample:

- N = 800—400 general population and 400 those who have or would purchase a product because the product or its packaging was made from recycled materials / recyclable
- Click-balanced on age, gender, region

[EACH QUESTION WILL BE DISPLAYED ON ITS OWN PAGE, UNLESS OTHERWISE SPECIFIED]

[NO SURVEY TITLE TO BE DISPLAYED TO RESPONDENTS]

[DO NOT ALLOW ROUTED SURVEY TRAFFIC]

[PROGRAMMER: DISABLE RESUME LATER BUTTON FOR ENTIRE SURVEY]

INTRODUCTION AND SCREENING

[INTRO 1] Thank you for your willingness to participate in our study. The responses you give to our questions are very important to us. If you don't know an answer to a question or if you don't have an opinion, please indicate this in your response. Do not guess. Your personal information will be kept confidential. The results of this study will not be used to try to sell you anything. If you normally wear eyeglasses or corrective lenses when looking at a computer, tablet, or mobile phone screen, please wear them while taking this survey.

When you are ready to get started, please select the "Continue >>" button.

[NEXT SCREEN]

S1. Before continuing with this survey, please carefully read these instructions:

- Please take this survey in one session.
- While taking this survey, please do not, at any time, open any other windows or tabs on this computer or device or any other computer or device.
- Please do not view any other written material while taking this survey.
- Please do not consult or talk with any person while taking this survey.
- You will not be able to go back to previous screens to change your answers.
- If you normally wear eyeglasses or corrective lenses when looking at a computer, tablet, or mobile phone screen, please wear them while taking this survey.

Do you understand the above instructions and agree to follow them?

1. Yes
2. No **[SCREEN OUT]**
3. Don't know / unsure **[SCREEN OUT]**

S2. What type of device are you using to complete this survey?

[RANDOMIZE 1-4]

1. Desktop computer
2. Laptop computer
3. Tablet computer
4. Mobile phone
5. Other **[SCREEN OUT]**

[TERMINATE IF DEVICE TYPE DOES NOT MATCH DETECTED DEVICE]

S3. Please verify that you are human.

[INSERT reCAPTCHA]

S4. Are you...?

1. Male
2. Female
3. Prefer not to say **[SCREEN OUT]**

S5. Please enter your age. **[TEXTBOX; ALLOW 1-99]**

☐ Prefer not to answer **[SCREEN OUT]**

[TERMINATE IF RESPONDENT IS UNDER 18; CODE IN AGE BUCKETS; FLAG IF AGE DOES NOT MATCH PANEL DATA WITHIN 1 YEAR. TERMINATE IF ENTERED AGE IS MORE THAN 1 YEAR DIFFERENT FROM PANEL AGE.]

S6. In which state do you currently reside?

[INSERT DROP DOWN BOX WITH U.S. STATES & DC; INCLUDE “Outside of the U.S.” OPTION, SCREEN OUT IF SELECTED]

S7. Please enter your zip code.

(Enter 5-digit zip.)

[TERMINATE IF ZIP DOES NOT MATCH STATE; ASSIGN REGION]

[NEXT SCREEN]

S8. Are you...? *(Select all that apply.)* **[RANDOMIZE RESPONSE OPTIONS 1-5]**

1. White / Caucasian
2. Black or African American
3. Asian
4. Native Hawaiian or Pacific Islander
5. American Indian or Alaskan Native
6. Other *(Please specify):* **[ANCHOR; EXCLUSIVE; INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]**
7. Prefer not to answer **[ANCHOR. EXCLUSIVE]**

- S9. Are you...? **[RANDOMIZE RESPONSE OPTIONS 1-2]**
1. Hispanic or Latino
 2. Not Hispanic or Latino
 3. Other (*Please specify*): **[ANCHOR; INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]**
 4. Prefer not to answer **[ANCHOR]**
- S10. Which of the following best describes your gross annual household income (i.e., income pre-tax)? **[ROTATE RESPONSE OPTIONS 1-6/6-1]**
1. Less than \$25,000
 2. \$25,000 – \$49,999
 3. \$50,000 – \$69,999
 4. \$70,000 – \$99,999
 5. \$100,000 – \$149,999
 6. More than \$150,000
 7. Don't know / unsure **[ANCHOR]**
 8. Prefer not to answer **[ANCHOR; MAX NOT TO EXCEED 10%]**
- S11. What is the highest educational degree you have completed?
1. Less than high school
 2. High school graduate (including GED or alternative credential)
 3. Some college, no degree
 4. Associate's degree
 5. Bachelor's degree
 6. Graduate or professional degree
 7. Prefer not to answer **[ANCHOR]**
- S12. Do you or does any member of your household work for any of the following? (*Select all that apply.*) **[RANDOMIZE 1-7]**
1. A market research or advertising company **[SCREEN OUT]**
 2. A trash / recycling company or facility **[SCREEN OUT]**
 3. An oil / gas company **[SCREEN OUT]**
 4. An environmental advocacy group **[SCREEN OUT]**
 5. A telecom company
 6. A school / university
 7. A bank / credit union
 8. None of the above **[ANCHOR; EXCLUSIVE]**
 9. Don't know / unsure **[ANCHOR; EXCLUSIVE; SCREEN OUT]**
- S13. In the past month, have you taken a survey on any of the following topics? (*Select all that apply.*) **[RANDOMIZE 1-6]**
1. Recycling **[SCREEN OUT]**
 2. Gasoline
 3. Environmental protection
 4. Cellular phones
 5. Higher education
 6. Banking or credit unions
 7. None of the above **[ANCHOR; EXCLUSIVE]**
 8. Don't know / unsure **[ANCHOR; EXCLUSIVE; SCREEN OUT]**

- S14. In the past month, have you purchased any products, partly because the product or its packaging was any of the following? (*Select all that apply.*) [RANDOMIZE 1-11]
1. Made from recycled materials
 2. Recyclable
 3. Made from biodegradable or compostable materials
 4. Secondhand, vintage, or upcycled
 5. Vegan or cruelty-free
 6. Energy-efficient (e.g., appliances, electronics)
 7. Made from sustainable materials (e.g., bamboo, hemp, alpaca)
 8. Ethically made (i.e., fair labor practices, fair trade certified)
 9. Locally produced or sourced
 10. Packaged with minimal or eco-friendly packaging
 11. Certified organic or natural (e.g., organic food, natural personal care)
 12. None of the above [ANCHOR; EXCLUSIVE]
 13. Don't know / unsure [ANCHOR; EXCLUSIVE; SCREEN OUT]
- S15. In the next month, are you likely to purchase any products, partly because the product or its packaging is any of the following? (*Select all that apply.*) [KEEP ORDER CONSISTENT WITH S14]
1. Made from recycled materials
 2. Recyclable
 3. Made from biodegradable or compostable materials
 4. Secondhand, vintage, or upcycled
 5. Vegan or cruelty-free
 6. Energy-efficient (e.g., appliances, electronics)
 7. Made from sustainable materials (e.g., bamboo, hemp, alpaca)
 8. Ethically made (i.e., fair labor practices, fair trade certified)
 9. Locally produced or sourced
 10. Packaged with minimal or eco-friendly packaging
 11. Certified organic or natural (e.g., organic food, natural personal care)
 12. None of the above [ANCHOR; EXCLUSIVE]
 13. Don't know / unsure [ANCHOR; EXCLUSIVE; SCREEN OUT]

[AFTER GEN POP N OF 400, ONLY QUALIFY IF S14R1 OR R2=1 OR S15R1 OR R2=1, FOR ADDITIONAL 400]

S16. Approximately how many times each week, if at all, do you do each of the following?
(Select one response per item.)

	Never or less than 1 time each week	1 time each week	2 times each week	3 times each week	4 times each week	5 times each week	More than 5 times each week	Don't know / unsure
Watch a professional sports event either at home or in person	☐	☐	☐	☐	☐	☐	☐	☐
Engage in physical activity for 30 minutes or more	☐	☐	☐	☐	☐	☐	☐	☐
Watch a full-length movie	☐	☐	☐	☐	☐	☐	☐	☐
Please select [INSERT NUMBER BETWEEN 2 - 5] times each week for this item	☐	☐	☐	☐	☐	☐	☐	☐
Go out to eat in a restaurant	☐	☐	☐	☐	☐	☐	☐	☐
Attend a live music or theatre concert	☐	☐	☐	☐	☐	☐	☐	☐
Participate in a video conference call	☐	☐	☐	☐	☐	☐	☐	☐

[IF S16R4=RANDOM SELECTION, CONTINUE, ELSE SCREEN OUT]

MAIN QUESTIONNAIRE

[INTRO 2] Thank you for participating in today's survey. We are interested in your honest opinions. There are no right or wrong answers. If for any question you don't know the answer or don't have an opinion, you may say so — please do not guess.

[NEXT SCREEN]

- Q1. If you know, what type(s) of recycling program(s) is/are available to you in your city/town/local municipality? **(Select all that apply.) [RANDOMIZE 1-4]**
1. Curbside or communal recycling programs (i.e., residents place recyclable materials in designated bins or carts for scheduled collection)
 2. Drop-off recycling program (i.e., residents bring recyclables to designated collection sites)
 3. Specialized recycling programs/events (e.g., electronics, hazardous waste collection, batteries, textiles, tires, etc.)
 4. Recycling buy-back program (i.e., receive cash for bringing recyclable materials to designated facilities/centers)
 5. Other **(Please specify)** **[ANCHOR; INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]**
 6. None of the above **[ANCHOR; EXCLUSIVE]**
 7. Don't know / unsure **[ANCHOR; EXCLUSIVE]**
- Q2. You indicated the following types of recycling program(s) is/are available to you in your city/town/local municipality. Which of the following offered recycling program(s) have you ever used? **(Select all that apply.) [ONLY PIPE RESPONSES SELECTED IN Q1, KEEP IN SAME ORDER AS ABOVE. IF "NONE OF THE ABOVE" OR "DON'T KNOW / UNSURE" SELECTED AT Q1, THEN SKIP Q2.]**
1. Curbside or communal recycling programs (i.e., residents place recyclable materials in designated bins or carts for scheduled collection)
 2. Drop-off recycling program (i.e., residents bring recyclables to designated collection sites)
 3. Specialized recycling programs/events (e.g., electronics, hazardous waste collection, batteries, textiles, tires, etc.)
 4. Recycling buy-back program (i.e., receive cash for bringing recyclable materials to designated facilities/centers)
 5. **[IF SOMETHING WAS TYPED INTO THE "OTHER" BOX AT Q1, DISPLAY HERE]**
 6. None of the above **[ANCHOR; EXCLUSIVE]**
 7. Don't know / unsure **[ANCHOR; EXCLUSIVE]**
- Q3. When a product is "recyclable," what does that mean to you? **(Please type in your response.)**
- [INSERT TEXT BOX; INCLUDE "Don't know / unsure" RESPONSE OPTION; DO NOT ALLOW BLANK UNLESS "Don't know / unsure" SELECTED; IF DON'T KNOW / UNSURE SELECTED, SKIP TO Q5]**

Q4. Is there anything else that “recyclable” means to you? *(Please type in your response.)*

[INSERT TEXT BOX; INCLUDE “Nothing else” RESPONSE OPTION; DO NOT ALLOW BLANK UNLESS “Nothing else” SELECTED]

[INTRO 3] Companies that process materials collected through recycling programs may use the materials collected in different ways. Across the next eleven screens, we will present you with various uses of these materials. Please indicate whether or not you would consider each to be recycling.

[RANDOMIZE ORDER OF Q5_1-Q5_11. RECORD ORDER. RANDOMIZE ORDER OF “YES” AND “NO” RESPONSE OPTIONS AND KEEP CONSISTENT FOR ALL Q5 QUESTIONS. INCLUDE PROGRESS FOR THESE ELEVEN TASKS TO SHOW 1/11, 2/11, 3/11, ETC.]

Q5_1. Consider this use of materials collected through recycling programs:

Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_2. Consider this use of materials collected through recycling programs:

Paper is cleaned and dried to create large rolls of paper which are used to make other paper products.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_3. Consider this use of materials collected through recycling programs:

Glass is mechanically crushed into small pieces, melted, and molded into new glass products.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_4. Consider this use of materials collected through recycling programs:

Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_5. Consider this use of materials collected through recycling programs:

Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_6. Consider this use of materials collected through recycling programs:

Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_7. Consider this use of materials collected through recycling programs:

Certain materials such as glass, paper, or plastic are sent to a landfill.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_8. Consider this use of materials collected through recycling programs:

Certain materials such as glass, paper, or plastic are burned in an incinerator.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion **[ANCHOR]**

Q5_9. Consider this use of materials collected through recycling programs:

Collected materials are burned to produce steam which is used to produce electricity.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion [ANCHOR]

Q5_10. Consider this use of materials collected through recycling programs:

Glass is mechanically crushed into small pieces and used in place of sand or gravel in making concrete or asphalt.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion [ANCHOR]

Q5_11. Consider this use of materials collected through recycling programs:

Paper is shredded, pulped, and pressed into pellets for use as animal bedding or landscape mulch.

Would you consider this to be recycling?

1. Yes, I would consider this recycling
2. No, I would not consider this recycling
3. Don't know / no opinion [ANCHOR]

[IF Q1R1=1, ASK Q6. OTHERWISE, SKIP TO Q7.]

Q6. You indicated your city/town/local municipality has a curbside or communal recycling program. Which of the following materials, if any, does your curbside / communal recycling program accept? (*Select all that apply.*) [RANDOMIZE 1-7]

1. Plastics
2. Glass
3. Paper/cardboard
4. Aluminum
5. Batteries and electronics
6. Clothing and textiles
7. Hazardous waste
8. Other (*Please specify*): [ANCHOR; INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]
9. None of the above [ANCHOR; EXCLUSIVE]
10. Don't know / unsure [ANCHOR; EXCLUSIVE]

Q7. You may have already mentioned this, but which of the following, if any, are consistent with your understanding of what it means when a product is “recyclable”? *(Select all that apply.)* **[RANDOMIZE 1-4]**

1. Technically capable of being recycled
2. Can be recycled where facilities are available
3. Can be recycled in most places
4. Only certain parts or components may be recyclable
5. None of the above **[ANCHOR; EXCLUSIVE]**
6. Don’t know / unsure **[ANCHOR; EXCLUSIVE]**

Q8. You indicated the following are consistent with your understanding of what it means when a product is “recyclable.” Which of these best describes what it means. *(Select only one.)* **[PIPE RESPONSES SELECTED IN Q7, KEEP IN SAME ORDER AS ABOVE. IF ONLY ONE ITEM SELECTED IN Q7 OR IF “NONE OF THE ABOVE” OR “DON’T KNOW” SELECTED AT Q7, SKIP TO Q9. INCLUDE “Don’t know / unsure” RESPONSE OPTION.]**

Q9. How do you decide whether a product is recyclable? *(Please type in your response.)*

[INSERT TEXT BOX; INCLUDE “Don’t know / unsure” RESPONSE OPTION AND “I don’t recycle”; DO NOT ALLOW BLANK UNLESS ONE OF BOXES SELECTED]

[IF Q9 = “I don’t recycle,” SKIP TO Q12]

Q10. You may have already mentioned this, but what type(s) of information, if any, do you consult to determine whether an item is recyclable? *(Select all that apply.)* **[RANDOMIZE 1-7]**

1. Recycling symbol and code on product’s packaging
2. Claims on product labeling/packaging
3. Material type (e.g., plastic, cardboard, glass, aluminum)
4. Local government or waste management website, flyer, or other communication
5. Consult friends / family
6. Product’s website
7. Advertising for the product
8. Other online resources (e.g., Google search, AI, social media) **[ANCHOR]**
9. Other *(Please specify):* **[ANCHOR; INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]**
10. None of the above **[ANCHOR; EXCLUSIVE]**
11. Don’t know / unsure **[ANCHOR; EXCLUSIVE]**

Q11. You indicated you consult the following type(s) of information to determine whether an item is recyclable. Which of the following type(s) of information is your primary or most important source of information to determine whether an item is recyclable?

[PIPE RESPONSES SELECTED IN Q10, KEEP IN SAME ORDER AS ABOVE. IF ONLY ONE ITEM SELECTED IN Q10 OR IF “NONE OF THE ABOVE” OR “DON’T KNOW” SELECTED AT Q10, SKIP TO Q12. INCLUDE “Don’t know / unsure” RESPONSE OPTION.]

Q12. What, if anything, are the benefits of recycled products? *(Please type in your response.)*

[INSERT TEXT BOX; INCLUDE “Don’t know / unsure” RESPONSE OPTION; DO NOT ALLOW BLANK UNLESS “Don’t know / unsure” SELECTED]

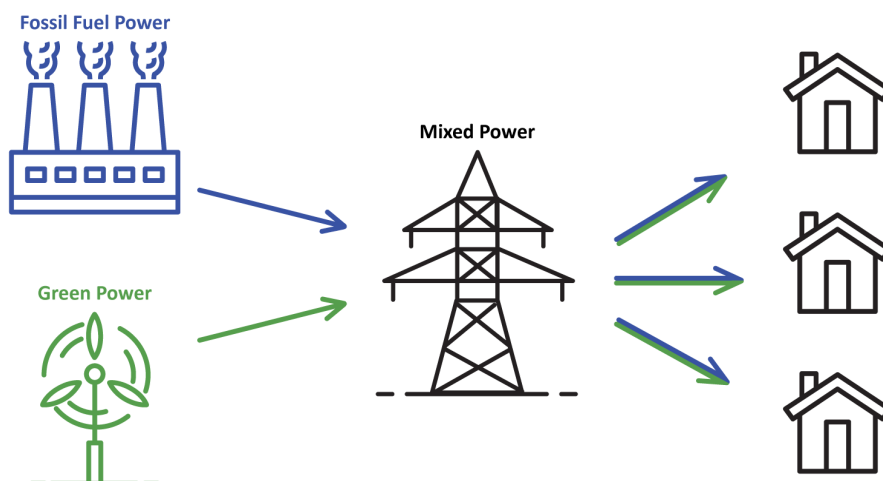
Q13. You may have already mentioned this, but which of the following, if any, are benefits of recycled products? *(Select all that apply.)* [RANDOMIZE 1-11]

1. Reduces waste sent to landfills and incinerators
2. Reduces use of raw / natural resources (e.g., timber, petroleum, minerals)
3. Lowers energy consumption compared to producing new materials from raw resources
4. Decrease pollution and greenhouse gas emissions associated with manufacturing
5. Conservation of wildlife and habitats
6. Supports local recycling industries and creates jobs
7. Aligns with personal values
8. Converts waste into new products or materials
9. They offer a good value or cost savings [FLAG]
10. Encourages companies to adopt more sustainable practices
11. Products are more durable or longer-lasting [FLAG]
12. Other *(Please specify)*: [INSERT TEXT BOX; DO NOT ALLOW BLANK IF SELECTED]
13. None of the above [ANCHOR; EXCLUSIVE]
14. Don’t know / unsure [ANCHOR; EXCLUSIVE]

[NEW SCREEN]

[INTRO 4] Please review the graphic and information below. The continue button will appear shortly. You will then be asked some questions.

Green power, such as electricity generated by wind or solar power, is mixed with electricity from fossil fuels before it reaches homes and businesses. Once the electricity is combined, you cannot tell which part came from which source.



[TRACK LENGTH OF TIME ON SCREEN. REQUIRE 10 SECOND DELAY BEFORE NEXT ARROW APPEARS.]

[NEW SCREEN]

Q14. We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

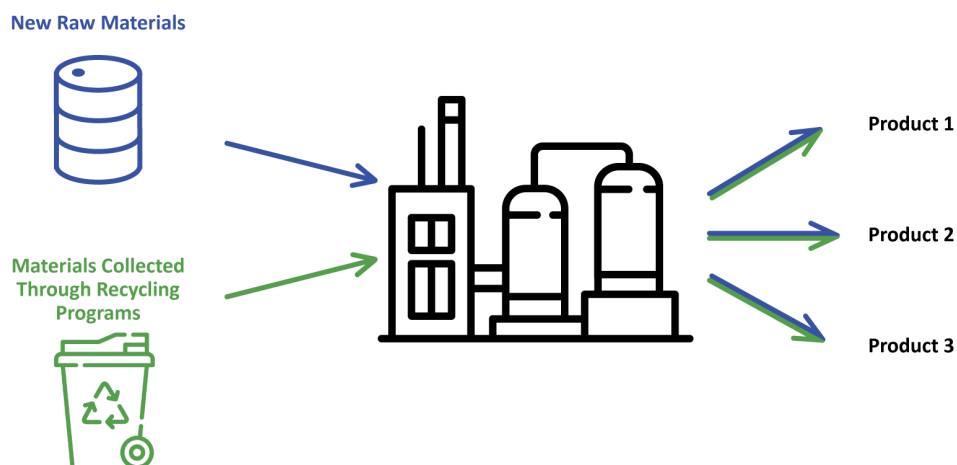
How appropriate do you consider this approach to marketing green power? ([*Click here to see the graphic and information again.*](#)) [IF CLICKED, POP-UP BOX WITH INTRO 4. TRACK CLICKS.] [RANDOMIZE SCALE 1-5 OR 5-1]

1. Completely appropriate
2. Somewhat appropriate
3. Neither appropriate nor inappropriate
4. Somewhat inappropriate
5. Completely inappropriate
6. Don't know / no opinion [ANCHOR]

[NEW SCREEN]

[INTRO 5] Please review the graphic and information below. The continue button will appear shortly. You will then be asked some questions.

Sometimes new products are made by combining recycled materials such as paper and plastic with new raw materials. The materials are broken down and mixed together in a production process like the one depicted below.



[TRACK LENGTH OF TIME ON SCREEN. REQUIRE 10 SECOND DELAY BEFORE NEXT ARROW APPEARS.]

[NEW SCREEN]

[RANDOMIZE ORDER OF Q15/Q16]

[INTRO 6] We want to know whether you think an approach to labeling recycled content is appropriate. On the next screens you will be presented with two examples.

Q15. If six pounds of new/raw wood pulp are combined with four pounds of material from recycled paper, only four pounds of the end product could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content? (**Click here to see the graphic and information again.**) **[IF CLICKED, POP-UP BOX WITH TEXT FROM INTRO 5. TRACK CLICKS.] [PRESENT SCALE IN SAME ORDER AS Q14]**

1. Completely appropriate
2. Somewhat appropriate
3. Neither appropriate nor inappropriate
4. Somewhat inappropriate
5. Completely inappropriate
6. Don't know / no opinion **[ANCHOR]**

[NEW SCREEN]

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content? (**Click here to see the graphic and information again.**) **[IF CLICKED, POP-UP BOX WITH TEXT FROM INTRO 5. TRACK CLICKS.] [PRESENT SCALE IN SAME ORDER AS Q14]**

1. Completely appropriate
2. Somewhat appropriate
3. Neither appropriate nor inappropriate
4. Somewhat inappropriate
5. Completely inappropriate
6. Don't know / no opinion **[ANCHOR]**

Exhibit C

Sensitivity Analyses

Various steps were undertaken to ensure that the data collected were of high quality. Veridata employed their standard quality control procedures in this study, such as digital fingerprinting to avoid repeat participation.¹ Additionally, all respondents had to agree to a series of instructions to be able to begin the survey. Respondents were instructed to take the survey in one sitting, to not view any websites or materials while taking the survey, and to not consult anyone else in taking the survey. This was to ensure that respondents were answering the questions based on their own opinions and not relying on others or information on the internet when answering the questions.

Further, anyone who entered a zip code that did not match their state of residence was screened out of the survey. Those who reported an age that was more than one year different than Veridata had on file for the person were terminated. These steps were taken to confirm the identity of those participating in the survey. A Google reCAPTCHA question was included to screen out “bots” from participating in the survey.² If respondents indicated they were taking the survey on a different type of device than Veridata detected, they were also terminated. Any respondents who gave gibberish or very poor answers to the open-ended questions were removed from the dataset.

At the end of the screening questionnaire, respondents had to answer a “red herring” survey question. Respondents were presented with various activities and were asked to indicate how many times each week they engage in the activities listed. One response option presented the respondent with the instruction: “Please select [X] times each week for this item,” with the number randomly appearing as 2, 3, 4, or 5 times each week. If the respondent did not select the corresponding frequency for this response option, they were screened out. This was to test that the participant was carefully reading the survey questions and paying attention.

In addition, a quality control analysis was performed to examine whether excluding certain respondents from the intended audience sample would impact survey results. This analysis first excluded 59 respondents who met one or more criteria for potentially being a low-quality interview. The specific criteria and the number of respondents meeting each criterion are listed in **Table C.1**

¹ See: <https://veridatainsights.com/dataquality/>.

² For more information about reCAPTCHA, see: <https://support.google.com/recaptcha/>.

below. Key results from the survey for the intended audience, removing anyone who met at least one of the criteria, are presented in **Table C.2** (reproducing Table 2 in the text) and **Table C.3** (reproducing Table 3 in the text). The results are substantially unchanged regardless of whether these respondents are included.

Table C.1
Quality Control Analysis
Intended Audience

Response	Count	Percent
Picked the "Don't know" check box to all open-ends	7	1.8%
Speeders - less than 1/3 the median completion time	6	1.5%
Selected "I do not recycle" at Q9, but indicated they participated in recycling at Q2	5	1.3%
Straightlined S14 or S15	41	10.3%
Gender or age does not match panel data	4	1.0%
Falls into One or More Categories Above	59	14.8%
Total Respondents	400	

For example, if the 59 flagged respondents are removed, 93.0 percent of the intended audience consider it to be recycling when “Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products,” the same figure as before the respondents were removed (also 93.0 percent). As another example, if the 59 flagged respondents are removed, 79.5 percent of the intended audience consider it to be recycling when “Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.” This figure with the 59 flagged respondents in the dataset is highly similar at 79.0 percent. Similarly, with the flagged respondents removed, 78.0 percent of the intended audience considers mass balance accounting completely or somewhat appropriate for labeling recycled plastics, compared to 79.0 percent in the full sample.

Table C.2
Share of Respondents Who Indicated "Yes, I would consider this recycling"
to Various Processes

Intended Audience - Removing Those Who Failed At Least One Quality Flag

Response	Intended Audience
<i>Traditional Recycling</i>	
Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.	94.7%
Paper is cleaned and dried to create large rolls of paper which are used to make other paper products.	96.5%
Glass is mechanically crushed into small pieces, melted, and molded into new glass products.	95.0%
Average	95.4%
<i>Advanced Recycling</i>	
Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.	93.0%
Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes.	83.0%
Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.	79.5%
Average	85.1%
<i>Not Recycling</i>	
Certain materials such as glass, paper, or plastic are sent to a landfill.	25.8%
Certain materials such as glass, paper, or plastic are burned in an incinerator.	29.3%
Average	27.6%
<i>Other Processes</i>	
Collected materials are burned to produce steam which is used to produce electricity.	64.2%
Glass is mechanically crushed into small pieces and used in place of sand or gravel in making concrete or asphalt.	87.4%
Paper is shredded, pulped, and pressed into pellets for use as animal bedding or landscape mulch.	92.7%
Total Respondents	341

*Q5. Consider this use of materials collected through recycling programs: [INSERT SCENARIO].
Would you consider this to be recycling?*

Table C.3
Share of Respondents Finding Mass Balance Accounting Approaches Appropriate for Various Materials
Intended Audience - Removing Those Who Failed At Least One Quality Flag

Response	Green Power	Raw Wood Pulp and Recycled Paper	Plastic Waste and Fossil Fuels
Share selecting "Completely appropriate" or "Somewhat appropriate"	58.9%	77.4%	78.0%
Total Respondents	341	341	341

Q14. We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

How appropriate do you consider this approach to marketing green power?

Q15. If six pounds of new/raw wood pulp are combined with four pounds of material from recycled paper, only four pounds of the end product could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

In a second quality control analysis, those who said “Yes I would consider this recycling” to all of the eleven items in Question 5 were removed, instead of those who straightlined S14 or S15. Those removed for each criterion in this version of the analysis are shown below in **Table C.4**.

Table C.4
Quality Control Analysis
Intended Audience

Response	Count	Percent
Picked the "Don't know" check box to all open-ends	7	1.8%
Speeders - less than 1/3 the median completion time	6	1.5%
Selected "I do not recycle" at Q9, but indicated they participated in recycling at Q2	5	1.3%
Straightlined Q5	52	13.0%
Gender or age does not match panel data	4	1.0%
Falls into One or More Categories Above	67	16.8%
Total Respondents	400	

Again, key results from the survey for the intended audience, removing anyone who met at least one of the criteria, are presented in **Table C.5** (reproducing Table 2 in the text) and **Table C.6** (reproducing Table 3 in the text). As shown, again the results are substantially unchanged regardless of whether these respondents are included.

For example, if the 67 flagged respondents are removed, 92.5 percent of the intended audience consider it to be recycling when “Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products,” highly similar to the figure before the respondents were removed (93.0 percent). As another example, if the 67 flagged respondents are removed, 76.9 percent of the intended audience consider it to be recycling when “Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.” This figure with the original full dataset is highly similar at 79.0 percent. Similarly, with the flagged respondents removed, 76.3 percent of the intended audience considers mass balance accounting completely or somewhat appropriate for labeling recycled plastics, compared to 79.0 percent in the full sample.

Table C.5
Share of Respondents Who Indicated "Yes, I would consider this recycling"
to Various Processes

Intended Audience - Removing Those Who Failed At Least One Quality Flag

Response	Intended Audience
<i>Traditional Recycling</i>	
Plastics are mechanically broken down by grinding, shredding, and melting; the melted products are used to produce new plastic products.	94.3%
Paper is cleaned and dried to create large rolls of paper which are used to make other paper products.	96.1%
Glass is mechanically crushed into small pieces, melted, and molded into new glass products.	94.0%
Average	94.8%
<i>Advanced Recycling</i>	
Plastics are chemically broken down into smaller molecules which are used to make plastic pellets to produce new plastic products.	92.5%
Plastics are chemically broken down into smaller molecules which are used to make lubricants and waxes.	81.4%
Plastics are chemically broken down into smaller molecules which are used to make fuels such as gasoline.	76.9%
Average	83.6%
<i>Not Recycling</i>	
Certain materials such as glass, paper, or plastic are sent to a landfill.	16.2%
Certain materials such as glass, paper, or plastic are burned in an incinerator.	19.5%
Average	17.9%
<i>Other Processes</i>	
Collected materials are burned to produce steam which is used to produce electricity.	60.4%
Glass is mechanically crushed into small pieces and used in place of sand or gravel in making concrete or asphalt.	86.5%
Paper is shredded, pulped, and pressed into pellets for use as animal bedding or landscape mulch.	91.6%
Total Respondents	333

*Q5. Consider this use of materials collected through recycling programs: [INSERT SCENARIO].
Would you consider this to be recycling?*

Table C.6
Share of Respondents Finding Mass Balance Accounting Approaches Appropriate for Various Materials
Intended Audience - Removing Those Who Failed At Least One Quality Flag

Response	Green Power	Raw Wood Pulp and Recycled Paper	Plastic Waste and Fossil Fuels
Share selecting "Completely appropriate" or "Somewhat appropriate"	56.2%	73.9%	76.3%
Total Respondents	333	333	333

Q14. We want to know whether you think one approach to marketing green power is appropriate. If you purchase 1,000 kwh of green power, the supplier must produce 1,000 kwh of green power. But, the actual electricity at your house is from a mix of renewable sources and fossil fuels that cannot be separated. Regardless, the electricity you purchased is marketed as green power.

How appropriate do you consider this approach to marketing green power?

Q15. If six pounds of new/raw wood pulp are combined with four pounds of material from recycled paper, only four pounds of the end product could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?

Q16. Plastic waste can be broken down into smaller molecules that are the same as those made from fossil fuels. If a production process mixes four pounds of molecules from plastic waste with six pounds of molecules from fossil fuels, only four pounds of the new products could be labeled as recycled content. It is labeled this way because the materials are blended together and cannot be separated.

How appropriate do you consider this approach to labeling recycled content?