

New Plastics Economy 2020 Recycling Rate Survey results summary

1. Context

1.1 *Recyclability in the Global Commitment*

The Global Commitment is led by the Ellen MacArthur Foundation in collaboration with the UN Environment Programme. Today, it unites over [450 businesses, governments, and other organisations](#) from around the world behind a common vision and a set of 2025 targets to address plastic waste and pollution at its source.

Among these targets is a commitment, adopted by all signatories responsible for putting plastic packaging onto the market, to making 100% of plastic packaging reusable, recyclable or compostable by 2025. This commitment is underpinned by a specific definition of ‘recyclable packaging’ which states that:

“A packaging or packaging component is recyclable if its successful post-consumer collection, sorting, and recycling is proven to work in practice and at scale.”

The basic idea behind this definition is that plastic packaging can only be claimed to be recyclable if its successful post-consumer collection, sorting, and recycling is proven to work in practice and at scale. In clearly going beyond mere ‘technical recyclability’, this is an important step to achieve real-world progress.

The suggested test and threshold to assess if the recyclability of a packaging design is proven ‘in practice and at scale’ is: Does that packaging achieve a 30% post-consumer recycling rate in multiple regions, collectively representing at least 400 million inhabitants? An alternative, especially relevant for more local players, is to check if a 30% post-consumer recycling rate is achieved in all the markets where their packaging is sold.¹

Making recycling work is a shared responsibility of a wide range of stakeholders. Therefore, the definition does not ask businesses to commit that, by 2025, recycling of all their plastic packaging will be proven to work in every market where their products are sold. It does however ask for clear proof points that recycling is happening in practice and at a scale that proves replicability, indicating that the design of the packaging (which is entirely within the producer’s control) is not a barrier to making recycling work in practice.²

We recognise that a lack of consistent, publicly available data on recycling rates by plastic packaging category can present a challenge for businesses to assess and report on the recyclability of their plastic packaging portfolio as part of the annual Global Commitment reporting process. To help increase data availability and consistency in recyclability assessments across various organisations, this document presents the results of our survey on plastic packaging recycling rates.

1.2 *The objectives of the Recycling Rate Survey*

The Survey, intended to be repeated annually, has been designed to help in the assessment of whether the recyclability of a given category of plastic packaging is proven ‘in practice and at scale’ by gathering and collating data on recycling rates by packaging category across a broad range of geographies. In

¹ The above thresholds are not intended to be achieved today, but aim to define an ambitious yet realistic target to reach by 2025.

² More information on the definition of ‘recyclable’ and other definitions used in the Global Commitment is available on the New Plastics Economy website here: https://www.newplasticseconomy.org/assets/doc/Global-Commitment_Definitions_2020-1.pdf

doing so, it aims to go some way to filling the data gap on plastic recycling rates globally, and to driving alignment of assessments of recyclability across the Global Commitment signatory group.

More practically, the survey outputs, as presented in this document, aim to help signatories to the Global Commitment assess (through step 1 of the recyclability assessment tool) and report on their recyclability rate by indicating for a list of common plastic packaging categories, for which categories survey contributors indicated that they reach a 30% recycling rate across regions covering at least 400 million inhabitants.

Beyond that, through the public release of the survey outputs we hope for the annual Recycling Rate Survey to serve as a first step towards better data availability and transparency overall, contributing to the development of a more comprehensive, global, open source database over time.

2. The 2020 Recycling Rate Survey

2.1 Contributors

To assess if the recyclability of a packaging design is proven 'in practice and at scale', an online survey was shared with organisations from the Ellen MacArthur Foundation and UN Environment Programme's combined network. These organisations were selected because we believed they might have access to the best available data or informed opinions for the regions in which they are active and include, for example, Extended Producer Responsibility organisations, governmental organisations, waste management companies and recycling associations.

The survey received a total of 30 responses from 33 organisations, some of whom responded on a joint basis. A list of contributors can be seen in Appendix I to this document.

2.2 Survey methodology

The survey was shared in February 2020, with a four week window for responses. Respondents were asked to select the geographies they wanted to provide data/input for, and were then asked for the following data, for each geography selected:

- A 'best estimate' of the overall recycling rate for all plastic packaging
- For each of a series of 17 common plastic packaging categories:
 - Does it currently achieve a recycling rate of 30% or higher, or not?
 - Whether above answer was supported by evidence
 - A best estimate of the actual recycling rate
- To provide information about any data sources used as evidence to support their answers

The full list of packaging categories is provided in the Appendix II.

The survey outputs have been compiled using the data provided by contributors on an 'as is' basis. Information about how and which data has been presented in the summary table is provided in section 2.3 below.

2.3 2020 Recycling Rate Survey outputs

33 organisations contributed to the survey, a number of whom provided responses for multiple geographies. As a result, between one and five responses were received for each of the 33 geographies

covered.³ The responses provided 378 data points on recycling rates for different categories of plastic packaging across a broad range of geographies. These included 27 countries, two supra-national regions and four sub-national regions, together covering four billion inhabitants.

Table 1 provides a summary of the output of the survey. It indicates for which categories of plastic packaging the survey results indicated that a system for recycling exists in practice and at scale, i.e. for which of these the survey found evidence that a 30% recycling rate for one or more regions, collectively covering at least 400 million inhabitants is being met.

- For each packaging category, the table indicates in which geographies survey contributors indicated (by unanimous or majority view in the case of multiple responses being received for that geography) that, in their view or based on data available to them, the rate of recycling of the packaging category is 30% or higher.⁴
- If the total population covered by these countries exceeds 400 million, it has been indicated in the table that for that packaging category a system for recycling is considered to exist in practice and at scale.

There were 15 instances (out of 378 packaging category-geography combinations in total) where a packaging category for a given geography received a 'mixed response' - that is, where there were only two contributors, and one respondent offered a view in favour of a 30% recycling rate being met while the other offered a view against.⁵ In these cases, the survey is not considered to have provided evidence that the 30% threshold is met in the given geography for the relevant packaging category. It is important to note that the inclusion of those data points in the summary table findings would not change the indication on whether or not there is a system for recycling for any of the relevant packaging categories (i.e. for the packaging categories not yet reaching the the 400 million inhabitants threshold, this threshold would still not be met when adding the countries with mixed opinions).

In addition to the tables referenced above two additional resources are provided:

- A consolidated list of sources referenced by contributors in support of their responses is provided in Appendix IV of this document
- The full survey output, including individual responses by country and packaging category, estimates of recycling rates and sources provided, is available for download in spreadsheet format separately

2.4 Going forward

There is an ambition to repeat this survey annually going forward, in the hope that more and new data becomes available over time with the following objectives:

- In the short term, it will help more than 200 businesses in the Global Commitment with assessing and reporting progress on recyclability in a consistent way.
- Beyond that, through public release of the output we aim for this exercise to serve as a step towards better data availability and transparency overall, contributing to the development of a more comprehensive, global, open source database over time.

³ 73% of the geographies for which responses were received were covered by one response, 9% with two responses, 12% with three responses, 3% with four responses, and 3% with five responses.

⁴ Countries were listed where there was a single response for that packaging category indicating a 30% or higher recycling rate (with none opposing that view), or in the case of multiple responses where there was a unanimous or majority view that the 30% rate is being achieved.

⁵ These geographies are not included for the relevant packaging category and population totals in the summary table, but are presented in a separate table in Appendix III

Table 1: Summary of output

Packaging category	Evidence found that a 'system for recycling' exist in practice and at scale today ⁶	Countries/Regions where responses provide evidence for a 30% recycling rate being achieved <i>Content in brackets: (# responses, if >1 - alignment between responses)</i>	Total population for which survey responses provide evidence of a 30% recycling rate being achieved ⁷
PET bottles	Yes	Regions: Europe (4 - majority) Countries: Australia; Austria; Belgium; China; Denmark; France (3 - unanimous); Germany (3 - unanimous); India; Japan (3 - unanimous); Netherlands; Norway; Poland (2 - unanimous); Russia; South Africa; South Korea; Spain*; Sweden; Switzerland; United Kingdom (2 - unanimous) Sub-national regions: Province of British Columbia (Canada)	3.7 billion
PET Thermoforms	No	Australia; Spain*	72 million
Other PET rigid	No	Australia; Spain*	72 million
HDPE Bottle	Yes	Regions: Europe (3 - unanimous) Countries: Belgium; France (3 - majority); Germany (2 - unanimous); Greece (2 - unanimous); India; Netherlands; Poland (2 - unanimous); Russia; South Africa; Spain*; United Kingdom (3 - unanimous); United States (3 - majority)	2.4 billion
HDPE Other rigid	Yes	Germany (2 - unanimous); Netherlands; Spain*; United States (3 - majority)	474 million
PP Bottle	Yes	Regions: Europe (3 - majority); Countries: Germany (2 - unanimous); Netherlands; Poland (2 - unanimous); Russia; Spain*; United Kingdom (3 - majority)	671 million
PP other rigid	No	Netherlands; Spain*	64 million
LDPE Tubes	No	Spain*	47 million
PS rigid	No	Spain*	47 million
EPS rigid	No	Japan; South Korea; Spain*	225 million
PVC rigid	No	Spain*	47 million
>A4 mono-material LDPE flexibles in B2B context	Yes	Austria; Germany; Greece; Poland (2 - unanimous); Spain*; United States	514 million
>A4 mono-material LDPE flexibles in B2C context	No	Spain*	47 million
Other >A4 flexibles	No	Spain*	47 million
<A4 LDPE flexibles	No	Spain*	47 million
<A4 PP flexibles	No	Spain*	47 million
<A4 multimaterial flexibles	No	Spain*	47 million

⁶ The question 'Does a system for recycling exist in practice and at scale today?' is answered 'yes' for a specific packaging category if for this category the recycling rate is indicated as reaching 30% or higher in geographies together covering more than 400mln inhabitants on the basis of the data in the third and fourth columns of the table.

⁷ This is an aggregate number based on the countries' population estimates from the World Bank's database 2018. For the purpose of population calculations 'Europe' is taken as the European Union, Norway, Switzerland and the United Kingdom.

* The data provided for Spain relates to facility input volumes vs output volumes which were specified in the survey guidelines.

Notes on Table 1

Please keep in mind that:

- While this table presents information on recycling rates for common plastic packaging categories across a wide range of geographies, we are aware that data is still lacking for a number of geographies. Notable gaps in country-level data (based on the number of inhabitants) in this survey include Pakistan, Nigeria, Bangladesh, Mexico and Ethiopia.
- Some responses covered only a minority of plastic packaging categories for the relevant geography (e.g. China, Brazil).
- If your organisation only puts packaging on the market in one or a few countries, and if you have evidence that a 30% post-consumer recycling rate is achieved for a given packaging category in all those markets, your assessment of recyclability of your packaging may be different.

While we encourage consistency in reporting amongst Global Commitment signatories, your organisation might decide to deviate from this table if your own investigation and assessment leads to different results. If you believe the data or aggregated opinions in the table are incorrect or you have additional data leading to different conclusions, you can continue to report based on your own assessment, while being transparent about the assumptions and data used for the reporting. If you find more data points (either in line with or contradicting the survey contributors' opinion), we invite you to share these data points with us, indicating if they can be shared with other Global Commitment signatories or not. This will help to improve data availability for future reporting cycles.

Additional notes to interpret the table (based on frequently asked questions)

The table is aimed at reporting progress to date and as such it is a point in time assessment of today's situation.

In other words, the table does NOT, and does NOT aim to,

- make any judgement on recyclability in the future (what is not recycled in practice and at scale today could be in the future)
- make any judgement on what is the most appropriate way forward (scale up recycling system, innovate recycling technology, change packaging design, eliminate, substitute, ...)
- claim that, if a system for recycling exists in practice and at scale for a certain category, that all packaging in that category is recycled, or that this category is recycled in all countries globally
- claim that, if no system for recycling exists in practice and at scale for a certain category, that no single packaging in that category is recycled.

This analysis at 'packaging category'-level is step one of a two-step process (outlined in Appendix II of the Global Commitment Reporting Guidelines document provided to all Global Commitment signatories) and should always be seen in that context. For those categories that have a system for recycling in place in practice and at scale, step 2 of the assessment looks at how any specific packaging design (considering labels, glues, inks, caps, additives, etc.) fits into that system.

The table includes aggregated information from organisations we believe might have access to the best available data or informed opinions for the regions in which they are active. The Foundation is not responsible for any errors or omissions, or for the results obtained from the use of this information and the Foundation disclaims all liability in relation to this document to the fullest extent permitted by law. All information in the table is provided "as is", with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information. It should not be considered a substitute for the independent investigations and the sound technical and business judgment of the reader.

Appendix I - Contributors to the 2020 Recycling Rate Survey

Note: this table excludes six contributors who elected to contribute anonymously

Contributors	Geographies for which responses were provided
Association of Plastics Recyclers	United States
Australian Packaging Covenant Organisation (APCO)	Australia
CICLOPLAST	Spain
Adame, Citeo, Elipso, Government of France	France
CRRA (China National Resource Recycling Association)	China
Ghana National Plastic Action Partnership (GH-NPAP)	Ghana
Government of the United Kingdom	United Kingdom
National Institute of Advanced Industrial Science & Technology (AIST), Japan	Japan
PETCORE Europe	Europe
Plastic Change	Denmark
Rekopol Organizacja Odzysku Opakowań SA	Poland
Smart Waste Portugal	Portugal
SUEZ	Belgium, France, Germany, Greece, Netherlands
SYSTEMIQ for Indonesia NPAP	Indonesia
The Recycling Partnership	United States
The University of Tokyo	Japan
Tomra	Austria, Germany, Greece, Norway, Poland, Russian Federation, Switzerland, United Kingdom, United States,
Veolia	Japan, South Korea, France, Germany, Netherlands, Sweden, United Kingdom
WasteAid	Africa, Europe
WWF-Philippines	Philippines
WWF-South Africa	South Africa
WWF-Kenya	Mombasa and Kwale (Kenya)
WWF-Turkey	Turkey
WWF-UK	United Kingdom

Appendix II - List of packaging categories

	Packaging category	Examples (non exhaustive)
Rigid / 3D	PET bottles	
	PET thermoforms	Trays, cups, blisters, etc.
	Other PET rigid	Jars, etc.
	HDPE bottle	
	HDPE other rigid	Pots, tubs, trays, cups, jars, etc.
	PP bottle	
	PP other rigid	Pots, tubs, trays, cups, jars, etc.
	LDPE tubes	
	PS rigid	Pots, trays, etc.
	EPS rigid	Clamshells, etc.
	PVC rigid	Blisters, bottles, trays, etc.
Flexible / 2D	>A4 monomaterial LDPE in B2B	Pallet wraps, large LDPE bags, etc.
	>A4 monomaterial LDPE in B2C	Wrap around bottles, wrap around toilet paper, etc.
	Other >A4 flexibles	
	<A4 flexibles, LDPE	Pouches, sachets, wrappers, small bags, etc.
	<A4 flexibles, PP	Pouches, sachets, wrappers, small bags, etc.
	<A4 flexibles, multimaterial	Pouches, sachets, wrappers, small bags, etc.

Appendix III - Mixed responses

We have provided below a list of countries where we received ‘mixed responses’ (i.e. two contributors, each providing conflicting opinions) on whether the respective packaging category meets the 30% recycling rate threshold.

It is important to note that the inclusion of those data points in the summary table findings would not change the indication on whether there is a system for recycling for the relevant packaging category (i.e. for the packaging categories not yet reaching the 400 million inhabitants threshold, this threshold would still not be met when adding the countries with mixed opinions).

Packaging category	Countries	Population
PET bottle	Greece	10,727,668
Other PET rigid	Switzerland	8,516,543
PET Thermoforms	United Kingdom	67,530,172
HDPE bottle	Switzerland	8,516,543
HDPE Other rigids	Poland	37,887,768
	France	65,129,728
PP bottles	Greece	10,473,455
	Switzerland	8,516,543
PP other rigid	Poland	37,887,768
	Germany	82,927,922
LDPE Tubes	Switzerland	8,516,543
PS rigid	Greece	10,473,455
EPS Rigid	Greece	10,473,455
>A4 mono-material LDPE flexibles in B2B context	United Kingdom	67,530,172
>A4 mono-material LDPE flexibles in B2C context	Greece	10,473,455

Appendix IV - Consolidated list of sources referenced by respondents in support of their responses

1. American Chemistry Council, the Association of Plastic Recyclers. *2018 United States National Postconsumer Plastic Bottle Recycling Report*, (2018)
2. ACC, *ACC All Bottle*, (2019)
3. AMH Philippines, *Material Flow Analysis Report partial submission for the WWF EPR Study* (2020)
4. ANAPE, *EPS recycling in Spain*, (2018)
5. ANARPLA, *Plastics Recycling in Spain*, (2018)
6. APCO, *Australian Packaging Consumption and Resource recovery data report*, (2019)
7. APR, *APR Recycling rate*, (2019)
8. ARA, *Altstoff Recycling Austria AG TRANSPARENCY AND SUSTAINABILITY REPORT 2019*, (2018)
9. Avfall Norge, *Mepex Consult, Ökt utsortering av plast til materialgjenvinning*, (2019)
10. BAFU, *Beverage Statistics*, (2018)
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30. Fost Plus, *Press Release*, (2019)
31. Grant, A., *PETcore presentation*, (2018)
32. ICIS, *PETcore presentation*, (2017)
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34. Japan Containers and Packaging Recycling Association, (2017)
35. Korea Resource circulation Service Agency, *KORA statistics*, (n.d.)
36. Lambert, O., *[Tomra analysis]*, (2019)
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38. Miezah, K., Obiri-Danso, K., Kádár, Z., Fei-Baffoe, B., Mensah, M.Y., *Municipal solid waste characterization and quantification as a measure towards effective waste management in Ghana*, Waste Management, (2015), Volume 46, pp. 15-27
39. Ministry of the Environment Brasil, *Sistema Nacional de Gestão dos Resíduos Sólidos*, (2015)
40. Ministry of Environment and Food Denmark, *Affaldsstatistik 2017*, (2017)
41. Ministry of Environment Japan, (2017)

42. More Recycling (Formerly Moore Recycling Associates Inc.), *2015 National Post-Consumer NonBottle Rigid Plastic Recycling Report*, (2015)
43. More Recycling, *2017 National Post-Consumer NonBottle Rigid Plastic Recycling Report*, (2017)
44. Morgan, S., *RECOUP Household Plastics Collection Survey*, (n.d.)
45. National Association for PET Container Resources, The Association of Plastic Recyclers, *Postconsumer PET Container Recycling Activity in 2017*, (2018)
46. Plastic Waste Management Institute Japan, *PWMI Newsletter (No.49)*, (2020)
47. Plastics Europe, *PET Market in Europe State of Play*, (n.d.)
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62. WWF, *Akdeniz'de Plastik Raporu*, (2018)
63. WWF, BCG, *Türkiye'de İçecek Ambalajları için Atık Yönetimi*, (2019)
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