

JRC Workshop – New Mass Flow Analysis for the year 2022 (MFA 2022)

9 April 2024, online

Meeting report

Introduction and overview of the MFA 2022 project

Participants assessed the MFA 2022 project as very useful to their work and organisation (8.4 on a scale of 10, figure 1). When asked what could make the MFA 2022 project most useful to their work and organisation (figure 2), participants said this could provide additional data¹ and general information² on the EU market state of play for recycled plastics; in particular several participants considered this could help track the availability of recyclates and their quality for certain end uses.

Participants advised the MFA 2022 project to **articulate with existing data from the following sources**: PlasticsEurope/Conversio, Ceflex (flexible packaging flows), PCEP/Conversio, SystemIQ Reshaping plastics, OECD global plastics report, BKV/Conversio (mass flow for Germany), IK (PET flows for Germany), PRE statistics 2022, EPR organisations, data from national authorities, trade data as well as primary data from industry sources.

Clarifications on the MFA 2019

Questions from participants	Answers by the JRC team
What is the definition of “primary” and “secondary” plastics?	In the 2019 MFA model, “primary plastic” was intended as (virgin) polymer employed in products’ manufacturing, whilst “secondary plastic” was intended as recycled plastic resulting from recycling activities.
Do secondary plastics include recyclates from any plastics recycling technology?	In the 2019 MFA model, only “secondary plastic” from mechanical recycling was considered.
What does fall under “other” for the use of recycled plastics?	In the 2019 MFA model, this category includes recycled plastic streams for which it was not possible to estimate a specific fate (i.e., it represents a category with an ‘unknown’ fate).
Is there a “non-identified” fate category for plastic waste in the model?	In the 2019 MFA model, the generated waste could be either collected, exported, mismanaged or lost. Waste mismanagement covers all unknown pathways plastic waste might be subject to.

¹ Words associated to data were “illustrative”, “quality”, “credible”, “useful”, “potential”, “predictability”

² E.g., “information and transparency”, “communication on our sector”, “

Questions from participants	Answers by the JRC team
What is the method of the Plastic Leak Project to assess the mismanagement and losses of plastic waste? Does the method take into account plastic losses from landfills, microplastic emissions from processing, illegal exports or exported waste not recycled? What about plastic materials (e.g. by-products, containers) not collected as waste but kept in use or stored ³ for a long time?	The Plastic Leak Project has the goal of providing a methodology (i.e., the ‘ <i>Plastic Leak Method</i> ’) to estimate plastic losses, releases, redistributions and final environmental sinks. It includes transfer coefficients and shares to assess plastic losses flows and waste mismanagement flows. In the 2019 MFA report, this method was coupled with other literature references to estimate losses and mismanaged flows (see Annex 2 of the 2019 MFA report). In the 2019 MFA model, losses from landfills were considered and were estimated based on ECHA . In the 2019 MFA model, the “stock” of material was considered and calculated as the difference between the consumed plastic and the plastic waste generated.
Does the model take into account the end application of a polymer, or just a sector of destination?	In the 2019 MFA model, data from Plastics Europe reports (i.e., the series of reports entitled “ <i>Plastic – The Facts</i> ”) were employed to calculate sector-specific polymer compositions (i.e., <i>which polymer(s) could be present in a given sector</i>).
Is transport only covering end of life vehicles, or all transport types (road, maritime, air)?	In the 2019 MFA model, the ‘ <i>transport</i> ’ sector was mostly based on plastic components in the automotive sector.

Main improvements needed to the MFA 2019

Following a presentation by the JRC, the participants identified the following (figure 3) as the **most three important aspects to improve** in the MFA 2022 compared to the previous edition (MFA 2019):

- 1) The granularity of the data on the end uses of the recyclates and the recycling technology used, in particular to take into account and distinguish between chemical recycling and physical recycling technologies. Several participants stressed the need to trace materials flows by polymer and by application, and/or by quality grade, and not only by sector (polymer-application ‘couple’, the main polymers mentioned being PE, PET, PP, PS, PA, PU, PC).
- 2) The data on imports and exports of recyclates. Several participants suggested the MFA should help track imports to the EU, including virgin & recycled plastics as well as, in the future, recycled hydrocarbons imported as feedstock. This was spotted as particularly challenging in the absence of specific Harmonised System (HS) codes for recyclates⁴.
- 3) The estimates on plastic waste lost to the environment or mismanaged. Some participants underlined that the fate of exported plastic waste (i.e., recycled or mismanaged) should be specified (e.g., for textiles).

Some participants suggested to align the MFA with the packaging categories defined in the PPWR and use the MFA for the ‘recycled at scale’ assessment. Some participants suggested to track bio-based feedstock origin in the MFA. One participant suggested to include tyres in automotive.

³ E.g. by-products stored by a company, containers or packaging kept or reused by households

⁴ <https://www.wcoomd.org/en/events/event-history/2022/visualising-a-greener-hs.aspx>

Figure 1



Figure 2



Figure 3

