

JRC Textile Workshop Questionnaire

Fields marked with * are mandatory.

Introduction

The aim of this questionnaire is (i) to identify issues that require further oral discussion at the workshop, and (ii) to validate and complement the techno-scientific data provided in the workshop background document entitled "Techno-scientific assessment of the management options for used and waste textiles" (session on textile targets), and (iii) to consolidate the scope for the development of technical proposals for EU-wide End-of-Waste criteria for textile waste.

Therefore, **we kindly request you to fill in the questionnaire and respond to the multiple choice questions by 17 April, 1 pm (CEST)**. When focusing only on the multiple choice questions, the **estimated time to fill in the questionnaire based on expert knowledge is about 15 minutes**. Your participation in this questionnaire is crucial to ensure a successful meeting, and would thus be greatly appreciated.

The individual responses and results of the participating organisations to this survey will not be publicly available and will exclusively be accessible to the Joint Research Centre and other European Commission services for the development of policies on textiles.

Information on your organisation

- * We kindly request the submission of one consolidated reply per organisation.

Organisation Name

FEAD - European Waste Management Association

- * Name and surname of the organisation representative

Aizea Astor Hoschen

- * Email of the organisation or organisation representative

aizea.astorhoschen@fead.be

- * Geographical scope of your organisation

At most 1 choice

- | | | | |
|---|------------------------------------|--|--|
| <input type="radio"/> AT - Austria | <input type="radio"/> FI - Finland | <input type="radio"/> LT - Lithuania | <input type="radio"/> SI - Slovenia |
| <input checked="" type="radio"/> BE - Belgium | <input type="radio"/> FR - France | <input type="radio"/> LU - Luxembourg | <input type="radio"/> ES - Spain |
| <input type="radio"/> BG - Bulgaria | <input type="radio"/> DE - Germany | <input type="radio"/> MT - Malta | <input type="radio"/> SE - Sweden |
| <input type="radio"/> HR - Croatia | <input type="radio"/> EL - Greece | <input type="radio"/> NL - Netherlands | <input type="radio"/> ALL - ALL (Pan-European) |
| <input type="radio"/> CY - Cyprus | <input type="radio"/> HU - Hungary | <input type="radio"/> PL - Poland | <input type="radio"/> OTHER - - please specify below |
| <input type="radio"/> CZ - Czechia | <input type="radio"/> IE - Ireland | <input type="radio"/> PT - Portugal | |
| <input type="radio"/> DK - Denmark | <input type="radio"/> IT - Italy | <input type="radio"/> RO - Romania | |
| <input type="radio"/> EE - Estonia | <input type="radio"/> LV - Latvia | <input type="radio"/> SK - Slovak Republic | |

* Type of organisation

at most 1 choice(s)

- ☐ Member State or Member State representative
- ☒ Industry organisation (please further specify below)
- ☐ Non-governmental organisation
- ☐ Non-profit organisation
- ☐ Research organisation
- ☐ International organisation
- ☐ Other, please specify below:

For industry organisations, what is the main focus of your activities:

Multiple answers possible

- ☒ Collection and/or sorting of textiles
- ☒ Re-use of textiles (including e.g. repairing of textiles and other preparing for re-use steps)
- ☒ Recycling of textiles
- ☐ Retail or placing on the market of finished textile products (mainly from primary sources)
- ☐ Retail or placing on the market of recycled or second-hand textile products
- ☐ Manufacturing of intermediates for textiles (e.g. fibres/yarns)
- ☒ General waste management services
- ☐ Other, please specify below:

* I consent that any responses and information provided in this questionnaire may be used for the development of the JRC reports on textile targets and end-of-waste criteria for textile waste.

at most 1 choice(s)

- ☒ Yes
- ☐ No
- ☐ Yes, but only on condition that any information provided is anonymised, and that the data provided cannot be associated or linked to my organisation

* I agree to be contacted by the JRC to further expand on the answers provided.

at most 1 choice(s)

If deemed suitable for the further development of the project, the JRC may want to follow up with a limited number of stakeholders. In such case, the JRC will contact your organisation via email to schedule a telephone or videocall.

- ☒ Yes
- ☐ No

Section on possible targets for "preparing for re-use and recycling targets" for textile waste

DISCLAIMER: Please **note that even after initial submission, the questionnaire on this 'targets' session will remain open**. You will be able to modify your answers in this section after the workshop as well as to further expand on the answers with quantitative data, if needed. The **final deadline** for submitting answers related to this section is 5 May 2023.

To update your contribution after initial submission, please click <https://ec.europa.eu/eusurvey/home/welcome/runner>, access the file using your contribution ID received upon initial submission.

1. Mass Flow Analysis - Reference year 2019 (section 3.1 and 3.2 of the background document - Figure 3 and 4)

- Target group for answer: all actors
- Objective of the question: update and/or validate the Mass Flow Analysis for the reference year 2019
- Click (?) for more background

Have you spotted clear errors or flaws in the presented textile waste flow analysis for 2019 as reference year that are inconsistent with other studies, and shed a different light on the main conclusions and magnitudes of the problems for textile waste management? If so, in relation to which flow?

Textile mass flows presented in the JRC report are based on assumptions (e.g. textile mass per m² of carpet) and inconsistent available data (e.g. Eurostat, data reported in scientific literature) that explain variations in data presented and conclusions of available assessments. We aim at presenting an analysis that presents flows that are - within boundaries - reconcilable to other studies and findings. Above all, the study should enable to elucidate the nature and order of magnitude of the problems associated to textile waste management in the EU.

- ☐ Apparent production
- ☒ Separate collection and/or sorting
- ☒ Export of used and waste textiles
- ☒ Recycling
- ☒ Incineration/landfilling
- ☐ Post-industrial and/or pre-consumer waste
- ☐ Waste composition (split up between waste from households and commercial/industrial activities)
- ☐ I am not aware of main flaws in the analysis
- ☒ Other, please specify:

Specify:

1500 character(s) maximum

Please see the table attached to question 7.

2. Outlook on the sorting of used and waste textiles (section 4.2 of the background document).

- Target group for answer: Actors involved in the collection and sorting of used and waste textiles, Member State or local authorities, other actors
- Objective of question: increase insights on future textile mass that will be sorted in the EU.
- Click (?) for more background

Have any specific qualitative or quantitative objectives been set in your organisation or Member State level in relation to the **sorting** of used and waste textiles in the future?

at most 8 choice(s)

In line with Article 11 of the Waste Framework Directive, systems for the separate collection of textile waste have to be established by 1 January 2025 in EU Member States. Moreover, the ongoing revision of the Waste Shipment Regulation envisages a more environmentally sound management of textiles in the destination countries. Amongst others, both factors may affect the amount of textiles for sorting, a prerequisite for re-use or recycling in the EU.

- ☐ No changes planned at present
- ☒ Increase in capacity for textile sorting (please further specify below, e.g. with quantitative data)
- ☐ Adapt sorting process by increased reliance on automated sorting
- ☒ Increase in textile recycling (own and/or outsourced activity in the EU)
- ☐ Increase in textile recycling outside the EU
- ☐ Increase and/or redirect the export of unsorted textile waste to other EU Member States (please further specify below)
- ☐ Increase and/or redirect the export of unsorted textile waste to third countries outside the EU (please further specify below)
- ☐ Increase the import of unsorted textile waste from other EU Member States or third countries (please specify further below)
- ☐ I do not have the knowledge or data to respond to this question
- ☐ Other (please specify below)

Please specify, with quantitative data if possible:

1500 character(s) maximum

The Fashion for Good Database provides current publicly available information on different mechanical and chemical recyclers:

Airtable - Sorting for Circularity Europe - Recyclers Database

FEAD will provide contact details of companies for quantitative feedback on request.

3. Present and future capacity for textile recycling (section 4.3.4 and section 4.3.5 of the background document)

- Target group for answers: companies active in textile waste recycling, research organisations, other actors
- Objective of the question: increase insights in the build-up of capacity for textile recycling in the EU to develop a realistic forecast for textile recycling for the period 2030-2035.
- Click (?) for more background.

a) Please complete the Table below with any information your company may have.

The JRC has attempted to map actors involved active in textile waste recycling in the EU, providing a draft estimate on recycling capacity of about 0.7-0.8 Mt yr⁻¹.

However, this is based on a non-exhaustive list of companies, and a better insight for future capacity development is required.

	answer	further specifications and comments
Company name		
Website		
Input to recycling - place of origin of input material (local vs. international - please specify details)		
Input to recycling – source (post-industrial, pre-consumer, post-consumer and their relative shares) and fibre composition		
Inbound - present capacity (kilotonne yr ⁻¹)		
Inbound - future capacity planned (kilotonne yr ⁻¹). Please specify year of projection.		
Inbound - future fibre composition. Would your company accept textiles of mixed fibre composition? If so, please indicate if the recycling processes targets the recovery of the different (building blocks of the) fibres in the mixture for material recovery.		
Outbound - current capacity (kilotonne yr ⁻¹). Please specify output materials (e.g. fibers for apparel production, cleaning rags, chemicals) and split up per type of material.		
Outbound - future capacity planned (kilotonne yr ⁻¹). Please specify year of projection		
Outbond - change in type or relative share of output materials of the recycling process compared to present situation		

b) Is the process description in section 4.3.3 of the background document covering the main technologies, and mostly focuses on techniques that take in apparel, home textiles, and post-industrial waste. Are there any additional innovative or promising emerging technologies that could play a role in the near future (2030-2035)? Would there be technologies that target other textiles (e.g. post-consumer waste from mixed materials containing textile parts such as dismantled cars and construction waste or other industrial /commercial sectors)?

1000 character(s) maximum

4. Life cycle assessment and life cycle costing (section 5 of the background document)

- Target group for answers: Private companies active in the recycling of textiles, actors involved in other stages/processes of textile waste management, general waste management services, others
- Objective of question: validate and update the life cycle and life cycle cost assessment with data from operational plants
- More background (click (?) below)

Would you be able to provide additional data to update the environmental impacts from **the recycling stage** in the life cycle assessment models used, and if so, would you be available to form part of a technical working sub-group to further develop the life cycle assessment and life cycle costing assessment?

The JRC has performed a life cycle assessment based on data available in techno-scientific literature as well as in-house data available from other projects. The JRC would like to update this extremely technical assessment, potentially based on (confidential) data from technology providers, particularly recyclers. Therefore, we aim to set up a small technical working group with companies active in recycling to review and update the outcomes presented in the background document. On this occasion, we would like to receive preliminary feedback on the private cost figures presented to ensure that these are in the ballpark for actual summed capital and expenditure costs for the sorting, collection, re-use, recycling, incineration and landfilling of textiles.

☒ Yes

☐ No

Please add any further relevant information and comments, if appropriate:

5. Drivers and barriers to a sustainable and circular management of waste textiles (section 6 of the background document)

- Target group for answers (non-exhaustive): all actors involved in (textile) waste management, member states authorities, others
- Objective of question: The identify and understand well the barriers to recycling so as to enable to develop policy measures that effectively address the barriers to recycling.

Please rate the following statements in relation to potential barriers to recycling:

--	--	--	--	--	--

	strongly disagree	disagree	neutral	agree	strongly agree
The lack of investment is the only barrier recycling processes in the EU that aim at recovering materials for apparel products	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recycling companies can easily find sellers of adequate feedstock for recycling processes.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sellers of textile waste make a profit when selling to recyclers.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The very low prices of primary raw materials prevents the recycling industry from growing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
There is a low supply of recycled textiles; therefore, there is no demand.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Producers of textiles, especially of clothing, do not take the recyclability of their products sufficiently into account at the design phase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Consumers don't trust textiles produced from recycled materials.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are very large textiles companies which use their market power to suppress textile recycling.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is difficult and costly for recyclers to determine the quality of the textile waste they buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Lack of scale is the only barrier to recycling processes that aim at recovering materials for apparel products.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When the separate collection of textiles increases, the cost of managing non-reusable waste will outweigh revenue from reusable apparel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
When the separate collection of textiles increases, sorters will sell non-reusable waste fractions to recyclers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
When the separate collection of textiles increases, there will be more mechanical recyclers in the EU.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
When the separate collection of textiles increases, there will be more chemical recyclers in the EU.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Is the aim to turn by 2030 70% of the non-re-usable textile waste into recycled materials for apparel applications a realistic objective?



6. Other questions (target group: all actors).

a) The JRC report estimates that textiles consumption, textile waste will grow by 2.5% each year until 2035 in Europe. Is 2.5% growth per year a fair estimate?

- ☒ Fair estimate
- ☐ 1% per year
- ☐ 4% per year
- ☐ 6% per year
- ☐ 8% per year
- ☐ Textile consumption will decrease over time

b) in your opinion, how much more are consumers willing to pay for a garment made with recycled fibre?

- ☐ Consumers are not willing to pay a price premium
- ☐ 1-5%
- ☐ 5-10%
- ☒ 10-15%
- ☐ 15-25%
- ☐ >25%

7. Have you identified clear errors or incorrect conclusions in the draft JRC report? If so, please use the template to upload any specific comments you may have.

Template for feedback

[template_JRC_questionnaire.docx](#)

Please upload your file with comments (only fully completed input using the provided template will be taken into consideration)

c5531fde-d34b-4814-adc4-02f910fd9d6a/template_JRC_questionnaire.docx

Section on End-of-Waste criteria for textile waste

DISCLAIMER: Please note that the answers provided in this section will be used during the workshop to steer the discussion on the initial scope for the development of end-of-waste criteria for textile waste. After the workshop you will have the chance to provide additional data and information during a dedicated stakeholder consultation that will be announced later on in the course of the project.

8. In line with the results of the [scoping study](#) carried out by the JRC and DG ENV with the aim of identifying candidate streams for the development of EU-wide end-of-waste or by product criteria, and considering the upcoming technological developments and the market share of textile products and fibres, the selected initial scope for the EoW work is the following:

For re-use – textile articles under scope

- Apparel (including footwear, accessories such as scarves, handkerchiefs or hats)
- Home textiles and carpets
- Technical textiles (e.g. household/professional cleaning, work-wear and protective clothing, incl. footwear)

For recycling – textile fibres under scope

- Natural origin fibres (animal origin: wool and silk fibre; vegetable origin: cotton, flax, man-made cellulosic fibre (e.g. viscose, lyocell), bio-based polyester fibres)
- Synthetic fibres (e.g. polyester, acrylic, polyamide, polypropylene, elastane)

a) Do you agree with the initial scope proposed for re-use?

- ☒ Yes
☐ No

If NO, please explain the reason(s) and which limitations or extensions you would propose.

2000 character(s) maximum

b) Do you agree with the initial scope proposed for recycling?

- ☐ Yes
☒ No

If NO, please explain the reason(s) and which limitations or extensions you would propose.

2000 character(s) maximum

Fibre mixtures and blends should be considered.

9. Do you agree to the development of separate sets of EoW criteria for textile waste undergoing a preparation for re-use operation and for textile waste undergoing a recycling operation?

- ☒ Yes
☐ No

Please justify your choice.

2000 character(s) maximum

This is needed due to the different nature of the processes and therefore the different output they will produce:

- Preparation for re-use is limited to the 'checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing'. The output of preparation for re-use will be a second-hand good.
- Recycling is the reprocessing of waste materials 'into products, materials or substances whether for the original or other purposes'. The output is a reprocessed good for the original or other purposes.

Different EoW criteria for preparation for re-use will also help in the differentiation between second-hand goods and waste e.g., for (waste) shipment purposes.

10. Would you be in favour of including in the scope of EoW criteria for recycling beside mechanical recycling also new emerging technologies as e.g. thermo-mechanical-, chemical-, and thermo-chemical recycling?

- ☒ Yes
☐ No

Please indicate which recycling technologies should be included in the scope and justify your answer.

2000 character(s) maximum

Considering the different types of existing fibres (natural and synthetic, mixtures blends), both mechanical and chemical recycling are needed. Nevertheless, EoW criteria for recycling should focus on the requirements of the output material, after the recycling process, regardless of the process itself. This will allow innovation and development of technologies and materials used.

11. The EoW point for re-use could be set e.g. after sorting, after preparation for re-use, or at the point of re-use. What would be the most appropriate point in the textile waste management chain where EoW status could be granted for re-use?

- ☐ Sorting output (e.g. bales)
☒ Output of preparation for re-use
☐ At the point of actual re-use (e.g. retail)
☐ Other, please specify below:

Please justify your choice and explain which other implications could arise from setting the EoW point for recycling at a specific stage of the value chain.

2000 character(s) maximum

This is in line with the definition of preparation for re-use in the WFD.

12. The EoW point for recycling could be set e.g. after sorting, after further treatment, or once the material has reached the form of fibres. What would be the most appropriate point in the textile waste management chain where EoW status could be granted for recycling?

- ☐ Sorting output (e.g. bales)
☒

Recycling output: after mechanical recycling (e.g. fibre, wiping cloth, filler, insulation); after chemical recycling (e.g. specific fibres, polymers)

- ☐ Textile producer output
- ☐ Other, please specify below:

Please justify your choice and explain which other implications could arise from setting the EoW point for recycling at a specific stage of the value chain.

2000 character(s) maximum

This is in line with the definition of recycling in the WFD.

13. Are there any updates since the consultation in the scoping exercise, regarding national EoW criteria for textiles (for re-use and for recycling)? Please list the relevant legislation and provide link or attach document below.

2000 character(s) maximum

France: Ministerial order of December, 11th of 2018 establishing criteria for the EoW status for objects and chemicals sorted for reuse. Textiles are specifically mentioned in annex I, 1.1, paragraph 7: https://www.legifrance.gouv.fr/loda/id/JORFTEXT000037832774?init=true&page=1&query=crit%C3%A8res+sortie+du+statut+de+d%C3%A9chet&searchField=ALL&tab_selection=all

Known national EoW criteria:

France: EoW criteria on cut wiping cloths made from used textiles for use as cloths (<https://www.legifrance.gouv.fr/eli/arrete/2019/2/25/TREP1833757A/jo/texte>)

Austria: EoW criteria for re-use (https://www.umweltberatung.at/download/?id=Prep-for-Re-Use_end-of-waste-guide_Austria_2019.pdf)

Please upload your file

14. Are you aware of existing standards or guidelines with regard to characterisation of textiles in general, and more specifically regarding re-used and recycled textiles?

Please list the relevant standards and provide link or attach document below.

2000 character(s) maximum

EuRIC Handling and Sorting Specifications: <https://euric-aisbl.eu/resource-hub/position-papers/handlingsorting-specifications-for-re-use-and-recycling-of-used-textiles>

- LAGA - Bund/Länder-Arbeitsgemeinschaft Abfall (2022): „LAGA-Mitteilung 40 Vollzugshilfe zur Vermeidung sowie zur Erfassung, Sortierung und Verwertung von Alttextilien“- Entwurfsfassung vom 03.08.2022 zur Vorlage bei betroffenen Verbände zur Einleitung des Anhörungsverfahrens

Please upload your file

15. Is there any further issue you would like to discuss during the meeting? Please indicate below.

2000 character(s) maximum

JRC contact details

For any further questions in relation to this questionnaire, please contact the JRC at

- **JRC-END-OF-WASTE@ec.europa.eu** (for questions related to Textiles End-of-Waste, using the subject **TEXTILES EOW**) or

- **JRC-WASTE-RESEARCH@ec.europa.eu** (for questions related to reuse and recycling targets for textiles, using subject **TEXTILE TARGETS**).

Privacy statement

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Contact

[Contact Form](#)