Preparatory Study on Textile Products

Second online stakeholder consultation

9-10 December 2024

WEBEX SESSION

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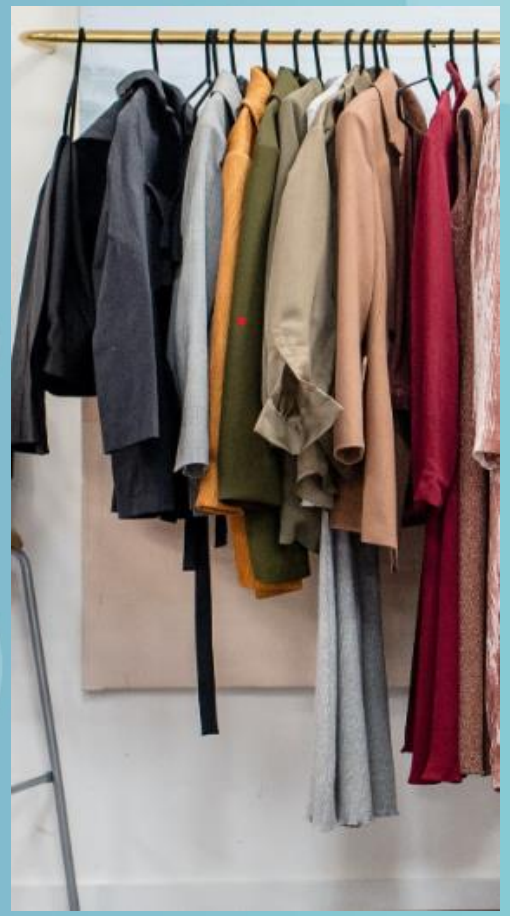
Preparatory Study on Textiles for product policy instruments



2nd Online Stakeholder Consultation Meeting – Day 1
9 December 2024

Joint Research Centre (JRC)

Antonio DELRE, David BERNAD BELTRAN, Zahara PÉREZ ARRIBAS,
Vincenzo SENATORE, Viktor KOULOUMPIS, Paola ALBIZZATI, Enrique GARCÍA JOHN

European Commission

Aim of the meeting

- JRC is supporting the development of the first Delegated Act under the ESPR. Addressing textile apparel.
- Background to this online consultation: “Task 4 of the preparatory study on textile products - November 2024”. Shared on 14 November
- Purpose is to verify the work done to date and to collect additional information and views
- Comments to be provided in writing until 10 February 2025
- Further developments will be presented in subsequent workshops

Agenda

Time (duration)	Topic
09:15-09:30 (15 min)	Log-in and preparation
09:30-09:35 (5 min)	Presentation (Chair) • Housekeeping rules • Aim of the consultation • Structure of the meeting
09:35-09:55 (20 min)	Presentation (ENV) • Updates on ESPR Presentation (JRC) • Topics of the consultation • Involvement of stakeholders Questions and answers
09:55-10:15 (20 min)	Presentation (JRC) • Aim and structure of Task 4, which reports the analysis of technologies • Identification and grouping of relevant product aspects • General analysis of product technologies Questions and answers
10:15-10:30 (15 min)	Break 1

Time (duration)	Topic
10:30-11:20 (50 min)	Presentation (JRC) • Physical durability Questions and answers
11:20-11:50 (30 min)	Presentation (JRC) • Maintenance • Repairability Questions and answers
11:50-12:05 (15 min)	Break 2
12:05-12:55 (50 min)	Presentation (JRC) • Waste generation • Recyclability and recycled content Questions and answers
12:55-13:10 (15 min)	Presentation (JRC) • Environmental impacts Questions and answers
13:10-13:30 (20 min)	Presentation (JRC) • Presence of substances of concern Questions and answers
13:30-13:40 (10 min)	Presentation (JRC) • How to contribute to the consolidated text of the 2nd milestone Questions and answers

Meeting etiquette

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Introduction

- Updates on ESPR
- Topics of the consultation
- Involvement of stakeholders

European Commission

ESPR – **tentative timeline & milestones**

July 2024

Publication of ESPR in the OJ

18 July 2024

ESPR **entry into force**

End 2024

Establishment of Ecodesign Forum; calls for membership

Early 2025

First meeting of the **Ecodesign Forum**

Consult the **Ecodesign Forum** incl. MS group **on WP**

April 2025

Adoption of the 1st ESPR **Working Plan**

July 2025

Acts on **unsold goods** destruction derogations and disclosure format

Late 2025

Acts on DPP registry, service providers, data carriers, digital credentials

Late 2025

Preparatory study on apparel

2026

Delegated act on apparel

- Ecodsign Forum
- Impact assessment
- WTO notification
- Consultation expert group
- Adoption
- Scrutiny period

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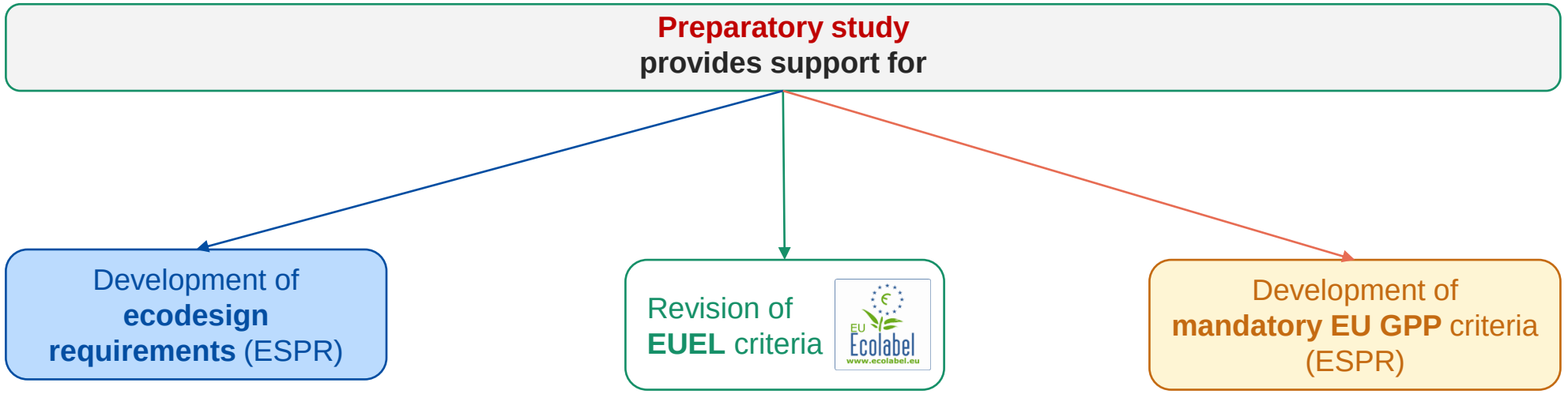
Introduction
Q&A

Are there any questions related to:

- Context and legal framework
- Aim

Aim of the preparatory study



European Commission

Draft of work streams on textile products

ESPR
ecodesign apparel

Preparatory study

Impact assessment

Drafting of the Delegated Act

Adoption of the Delegated Act

EUEL
apparel

Analysis of aspects specific to EUEL, e.g. social aspects and restrictions on chemical content

Drafting of the EUEL criteria

Proposal of the EUEL criteria

EUEL
home/interior textiles and textile cleaning products

Drafting of the EUEL criteria

Proposal of the EUEL criteria

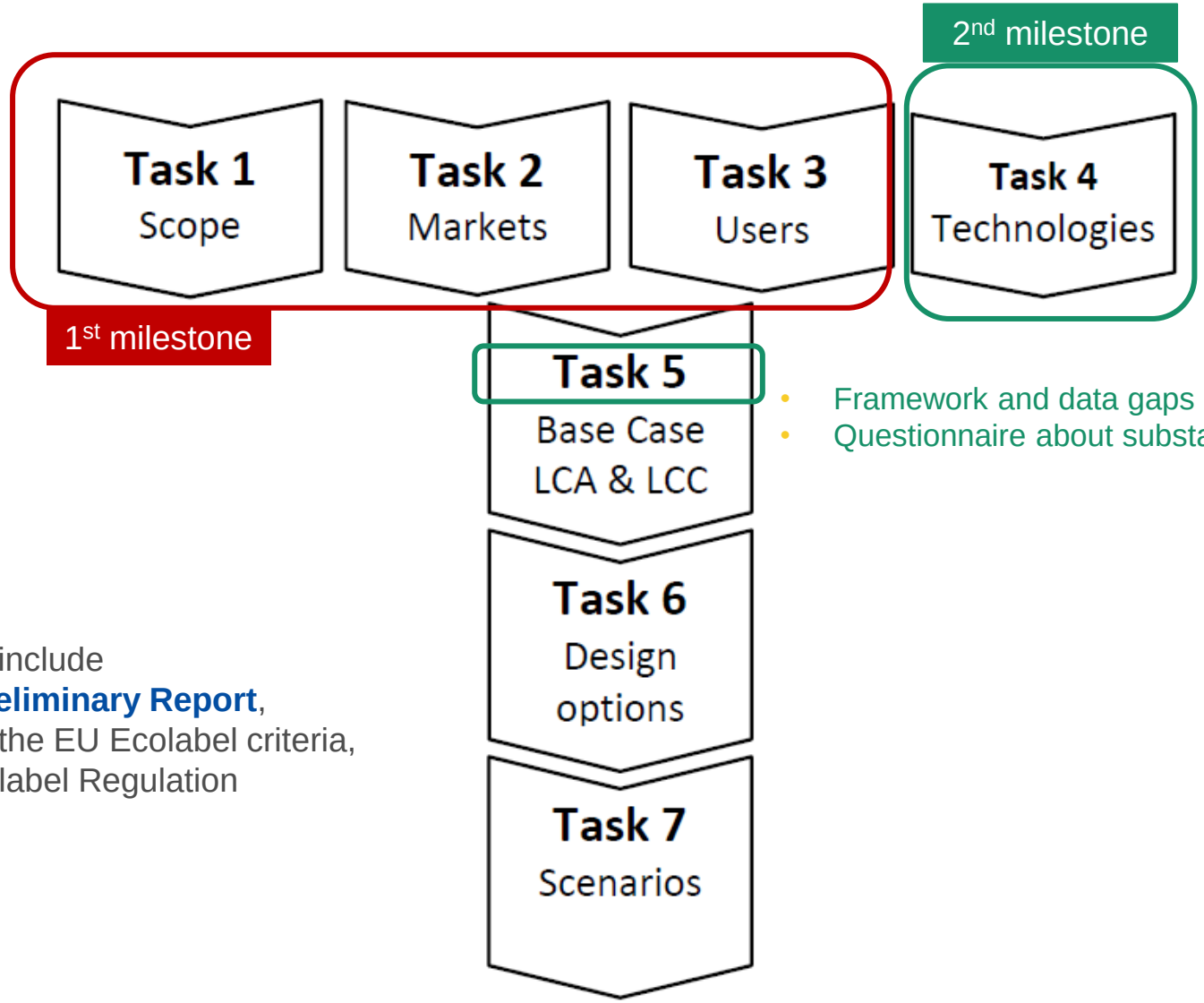
ESPR
mandatory EU GPP
apparel

Drafting of the Implementing Act

Adoption of the Implementing Act

Steps including consultation with stakeholders

Methodology of the preparatory study



Draft document shared with registered stakeholders on 14 November

- Framework and data gaps of environmental and economic model,
- Questionnaire about substances of concern

The PS will include
all elements of the Preliminary Report,
to be used for the revision of the EU Ecolabel criteria,
as set by the EU Ecolabel Regulation

European Commission

Involvement of stakeholders

Milestone	Topic to be addressed	Date
Initial questionnaire	Definitions, Scope, Market analysis, User Behaviour, Ecodesign aspects, EU Ecolabel, EU Green Public Procurement	30 March 2023 – 8 May 2023
1st milestone	Scope, market, user behaviour, current EU Ecolabel criteria, current EU Green Public Procurement criteria	23 February 2024 – 22 April 2024
2nd milestone	Technologies, framework and data gaps of environmental and economic model, and a questionnaire about substances of concern	14 November 2024 – 10 February 2025
3rd milestone	Analysis of base cases and design options	End of Q2 2025
4th milestone	Policy scenarios, and elements to be included in the digital product passport	Q4 2025

After the meeting, all registered stakeholders will be able to:

- Provide written comments to the working document of the preparatory study.

  The document will include an updated version of Tasks 1 to 3, addressed in the 1st milestone, and it will include the Task 4 on analysis of technologies.
- Consult the answers to all anonymised comments submitted to the 1st milestone.
- Contribute to the questionnaire on substances and substances of concern.
- Contribute to improve the framework LCA and LCC model.

Introduction
Q&A

Are there any questions related to:

- Methodology
- Involvement of stakeholders

Task 4 on product technologies

- Aim and structure of Task 4
- Identification and grouping of relevant product aspects
- General analysis of product technologies

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Product technologies – Aim

1 Technologies

This section addresses the Task 4 of the MEErP providing a **general technical analysis of the products in the scope.** This analysis aims to describe the following types of product technologies:

- The Base Case of technologies (BC), which is the average product on the market.
- The Best Available Technologies (BAT), which have the most ambitious performances available on the market. BAT are implemented at scale.
- The Best Not yet Available Technologies (BNAT), which have the most ambitious performances, but they are not implemented at scale, therefore they are considered not available on the market.

In this context, product technologies are products with defined characteristics related to a specific product aspect reported in Article 5(1) of the ESPR, such as durability, repairability, etc.

Identification and grouping of relevant product aspects

Product aspects in the same group can be addressed with the same parameters

- Physical durability, which includes physical durability, reliability and reusability;
- Maintenance;
- Repairability, which includes repairability, upgradability, possibility of refurbishment, and possibility of remanufacturing;
- Generation of waste;
- Recyclability and recycled content;
- Environmental impacts, which include environmental impacts, energy use and energy efficiency, water use and water efficiency, resource use and resource efficiency; and
- Presence of substances of concern.

Possibility of recovery of materials was considered not relevant

General analysis of product technologies

1.2 Analysis of technologies

For each relevant product aspect, this section describes the product technologies following a four-step analysis:

— Step 1: analysis of the ecosystem related to the specific product aspect;

— Step 2: identification of a methodology to describe the product technologies;

— Step 3: description of the product technologies based on previous steps. This description could be supported by a categorization to best describe the products in the scope.

In step 1, the ecosystem related to the specific product aspect was studied considering four elements:

- the **process techniques**, which are the instruments and practices used along the stages of the product's life-cycle to manufacture or treat product technologies,
- the **business models** of economic operators in the ecosystem,
- the **user behaviour**,
- the **legislative framework** and **industrial best practices**.

In step 2, the methodology used was specific to the product aspect and it was based on the analysis of the specific ecosystem. In step 3, the categorization aimed to gather all products that can be subject to the same future requirements.

Q&A

1. Do you agree with the relevant aspects selected? Why?

2. Do you agree with the grouping performed?
   Why? How it can be improved?

Break 1

European Commission

Preparatory Study on Textile Products

second online stakeholder consultation

9-10 December 2024

Break until 10:30

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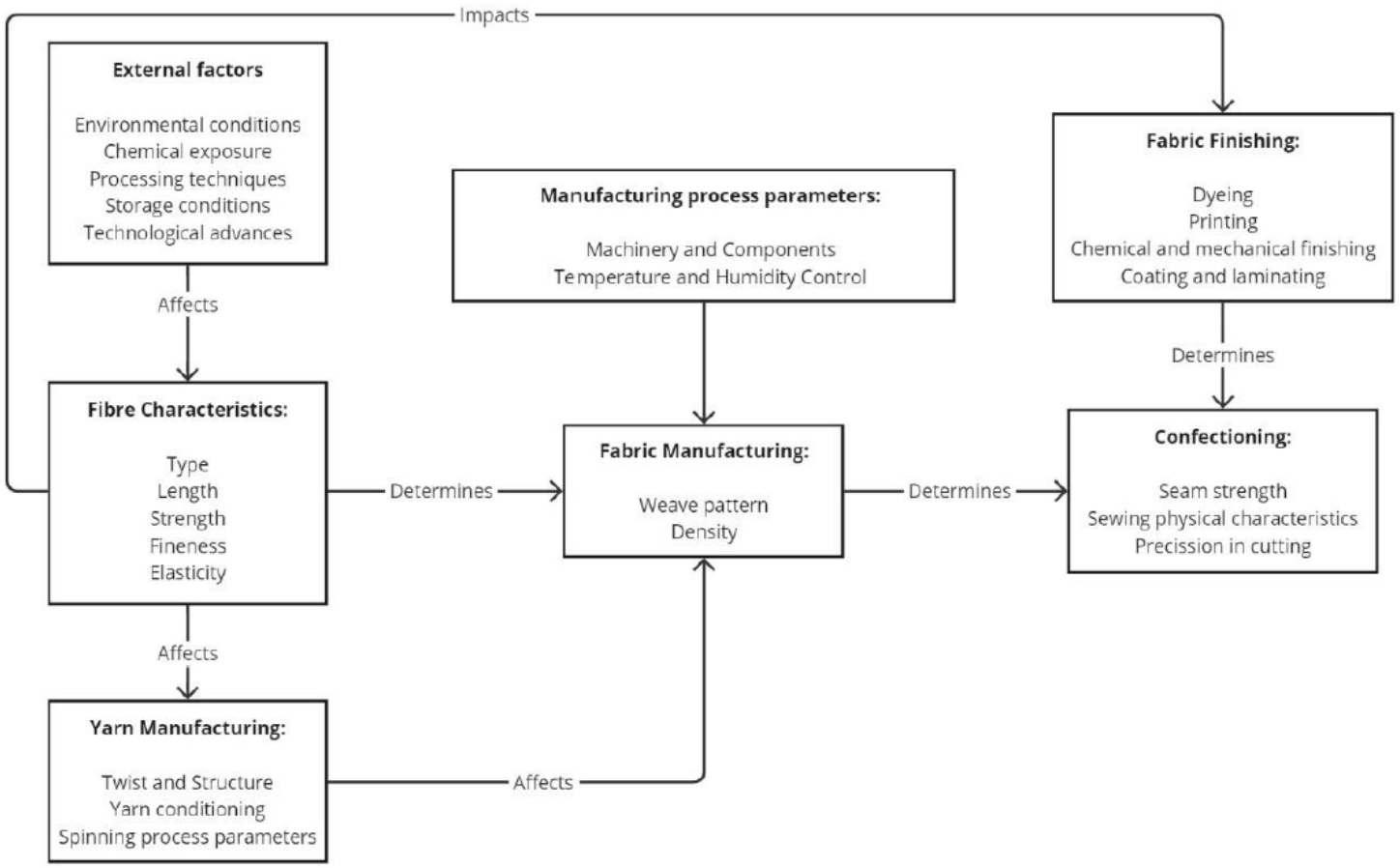
Physical durability

Manufacturing factors and process techniques

Figure 1. Overview of the main factors influencing the physical durability of textile apparel



Source: Own production based on AITEX's knowledge and (Rahman et al., 2023)

Natural vs synthetic – duality or complexity?

To meet consumer needs, textile apparel must:
(1) perform a specific function,
(2) meet consumer taste and comfort expectations, and
(3) be reasonably priced.

Achieving these requirements involves a complex engineering process that takes into account the various factors influencing physical durability.

The diverse range of fibres, each with unique characteristics, plays a crucial role in providing specific properties to textile apparel.

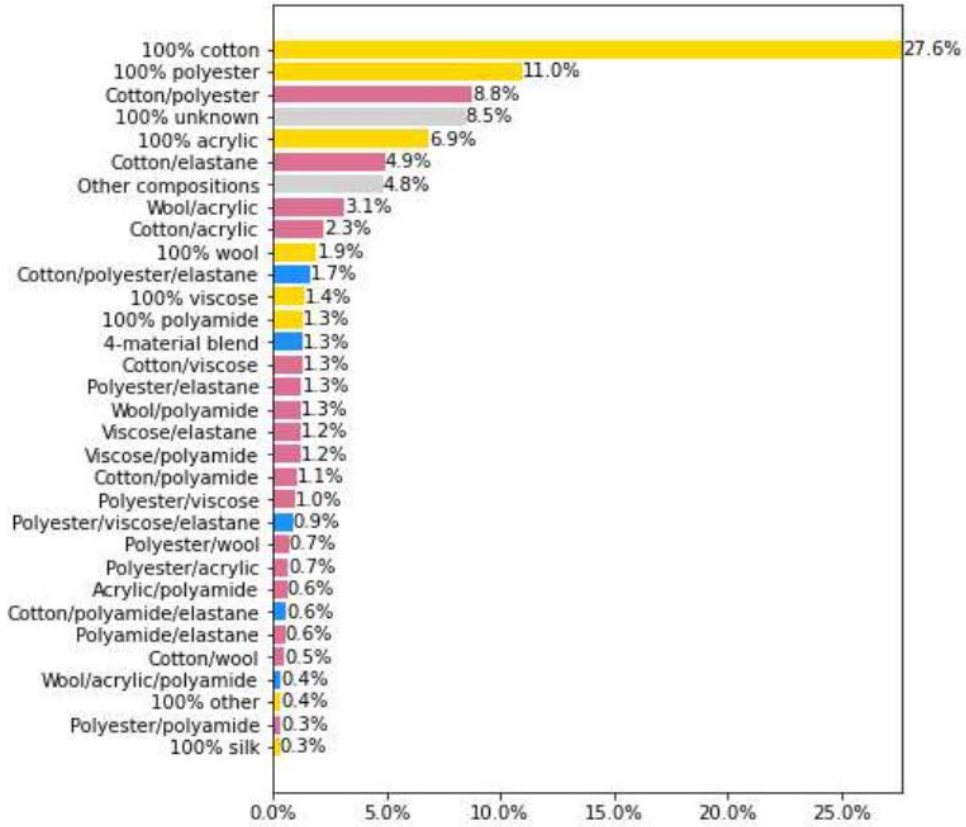


Figure 11: Main compositions (accounting for 95% of the textile non-reusable feedstock, in weight).

*Colour code: **yellow** = pure material; **pink** = two-material blend; **blue** = three or more material blend*

Source: Refashion. 2023. Characterisation study of the incoming and outgoing streams from sorting facilities. https://refashion.fr/pro/sites/default/files/rapport-etude/Overview_Characterisation_study_Refashion_2023_EN.pdf

JRC will soon publish a study describing the composition of textile products

How to assess physical durability

1. Selection of the key parameters, complying with the principle of economy
2. Identification of the characteristics of a new item,
3. Simulation of the aging process,
4. Assessment of the effects of the aging process,
5. Grouping products with homogeneous characteristics.

- Trousers, shorts and skirts excluding denim,
- Denim trousers, shorts and skirts,
- Sweaters, mid-layers and knitted dresses,
- T-shirts and polo,
- Shirts,
- Blouses and woven dresses,
- Jackets and coats,
- Hosiery: leggings, stockings, tights and socks,
- Underwear: underpants and boxers,
- Swimwear,
- Accessories.

Description of a product category from the perspective of physical durability

Table 5. Product description from the perspective of physical durability

ID	Category description	Key parameter (unit)	Test method	Characteristics of the new product	Simulation of the ageing process
1	Trousers, shorts and skirts, excluding denim	Dimensional change (%)	ISO 3759:2011	±3%	20 washing cycles following ISO 6330 Washing treatment according to label (domestic washing).
		Tensile strength (N)	ISO 13934-1: 2014	Longitudinal: ≥160 N Transversal: ≥120 N	
		Pilling resistance (5-step grading system)	ISO 12945-2: 2020 (2000 cycles)	Grade ≥4	
		Seam resistance (N)	ISO 13935-2:2014	≥100 N	
		Visual inspection for: Colour change Pilling Trimmings aspect Self-staining (5-step grading system)	ISO 15487:2018	Colour change: Grade ≥4 Pilling: Grade ≥4 Trimmings aspect: Grade 5 Self-staining: Grade 5	

The tests addressing dimensional stability and visual inspection need to be run after 1 cleaning cycle.
Washing treatments are supposed to follow information reported on the label. Although this information is usually available, it should not be given for granted because it is not mandatory by law.
All products made with denim fabric should not be tested for colour change because this type of fabric is designed to lose colour over time.
NA: Not available, because the category is too heterogeneous.

Source: AITEX's knowledge

It refers only to new products

Textile apparel accessories

Currently not described because they are too heterogeneous
They would require a subcategorization based on:

- Function: (1) gloves and mittens, (2) scarves, shawls, and mufflers, (3) ties and cravats, (4) hats and headgear, (5) handkerchiefs and veils, (6) belts and suspenders;
- Material composition: at least (1) silk products vs (2) non-silk products;
- Fabric technologies: (1) knitted, and (2) crocheted.

This would result in about **16** potential sub-categories

Development of specific methodologies would be needed

Between 2006 and 2022, the apparent consumption of accessories was only about **5%** in mass and **4%** in value of all products in the scope.

This would create disproportionate costs compared to the aim of the project

BC, BAT and BNAT in the perspective of physical durability

Based on the framework reported in **Table 5**, **technologies of textile apparel** can be distinguished as follows:

- **Bad case** (poorly performing products): performance level of at least one key parameter decreases more than 50% after aging;
- **BC**: performance level of all key parameters decreases between 30% and 50% after aging;
- **BAT**: performance level of all key parameters decreases between 20% and 30% after aging;
- **BNAT**: performance level of all key parameters decreases less than 20% after aging.

The performance decrease of the key parameters should be calculated as reported in **Table 6** and applies to all product categories.

Table 6. Guidance for the calculation of performance decrease in the framework of the physical durability

Result of the test method	Key parameter	Decrease of performance level
Numerical	Abrasion resistance (number of cycles) Bursting resistance (kPa) Dimensional change (%) Elasticity (%) Seam resistance (N) Tensile strength (N)	$\frac{\text{Value after aging} - \text{Value of the new item}}{\text{Value of the new item}} * 100\ (\%)$
5-step grading system	Colour fastness to chlorinated water Colour fastness to sea water Colour change via visual inspection Pilling resistance Pilling via visual inspection Trimmings aspect via visual inspection Self-staining via visual inspection	Each step represents a change of 20%
8-step grading scale	Colour fastness to artificial light	Each step represents a change of 12.5%

Description of all test methods is reported in **Table 23**

Source: own elaboration

Physical durability
Q&A

1. Do you agree with the methodology describing physical durability? Why? How can it be improved?

2. Would you agree to share data/studies on textile apparel composition?

3. Do you agree with the categories proposed? Why?

4. Do you agree with currently not analysing physical durability of accessories? Why? What could be an alternative approach?

5. Do you agree with the intervals chosen when describing BC, BAT and BNAT? Why? How would it be improved?

Maintenance and Repairability

European Commission

Maintenance

The European Commission is currently considering the introduction of harmonised and potentially mandatory textile labelling rules on textile care, in the context of the review of the Textile Labelling Regulation (EU) 1007/2011

(proposal estimated for June 2025)

Framework

1. Type of information provided, addressing all steps of the use-phase:
   - (a) cleaning,
   - (b) drying,
   - (c) ironing,
   - (d) storing,
   - (e) wearing,
   - (f) additional suggestions;
2. Carrier; and
3. Communication strategy.

Product Technologies - Maintenance

Table 8. Description of product technologies in the context of maintenance of textile apparel

Information	BC	BAT	BNAT
Cleaning	Using symbols reported in ISO 3758:2023	It reports symbols reported in ISO 3758:2023 explained with captions	It reports all types of cleaning operation the product can/should undergo: e.g. dry cleaning by professionals or home washing. In the case of professional cleaning, directions should be provided on compatible products for dry cleaning. In the case of home washing, directions should be provided on washing temperature, type and dosing of detergents and softeners, spin speed, type of textile products that can be washed with (e.g. similar colours and fibre types).
Drying	Using symbols reported in ISO 3758:2023	It reports symbols reported in ISO 3758:2023 explained with captions	It reports symbols reported in ISO 3758:2023 explained with captions.
Ironing	Using symbols reported in ISO 3758:2023	It reports symbols reported in ISO 3758:2023 explained with captions.	It reports symbols reported in ISO 3758:2023 explained with captions.
Storing	Not available.	Not available.	It includes directions on how to fold and hang the product, with description of the optimal environmental conditions. If relevant, specific information should be provided distinguishing good practices about storage after wearing from storage after cleaning operations.
Wearing	Not available.	Not available.	It specifies the function that the product is designed for: e.g. sport activities, leisure time, resistance to humid environment and rain, etc.
Additional suggestions	Not available.	Reduction of washing frequency and prefer line drying.	It includes any further information that could support the suitable maintenance of the product.
Carrier	Physical label.	Physical label and a website reported on the label.	Physical label is used for basic most important information or warnings, while other information is reachable with a support of a device (e.g. Radio Frequency Identification (RFID) system) incorporated in the product, so that it does not create discomfort and it is difficult to remove.
Communication strategy	Using symbols reported in ISO 3758:2023.	It reports symbols reported in ISO 3758:2023 explained with captions.	Users can easily navigate information provided by any economic actor because it is provided following a standardised format.

Physical labels are usually made of polyester and satin due to their softness and resistance properties (Nayak and Padhye, 2015).
Care symbols use ISO 3758:2023 ([12]).

Repairability – Some characteristics of the ecosystem

- Modular products and trade-offs with comfort and physical durability
- Use of standard parts
- Availability of spare parts
- Fashion trends
- Emotional attachment
- Price of repair and price of product’s replacement

Product technologies – Repairability

Table 10. Description of product technologies from the repairability perspective

Key parameter	Base Case (BC)	Best Available Technology (BAT)	Best Not yet Available Technology (BNAT)
Disassembly complexity	When products are made of more than one part, their disassembly is highly complex, requiring multiple steps to access damaged parts. The products use standard fasteners, but they are usually hard to access or remove.	When products are made of more than one part, their disassembly has low complexity, with easily accessible parts. The products use standard fasteners, designed for simple removal.	When products are made of more than one part, their disassembly can be performed without tools. The products use fasteners that can be detached and reattached multiple times without damage.
Tools accessibility	The repair operations require basic and specialised tools.	The repair operations require only basic tools.	The repair operations require no tools.
Standard fasteners	Compatible fasteners are available.	Compatible standard fasteners are available.	Compatible standard fasteners are available with personal customization via 3D printers.
Repair support resources	Repair support is very limited, with vague instructions and service limited to portions of the region where the product is sold.	The product has detailed, repair guidance about the failure of most common damaged product parts. Repair services are available in the whole region where the product is sold.	Interactive repair support is available real-time via augmented reality, artificial intelligence or other technologies. Repair services are available in the whole region where the product is sold.

Source: JRC own production.

Maintenance and Repairability Q&A

1. Do you agree with the methodologies used?
   Why? How can they be improved?

2. Do you agree with the description of BC, BAT and BNAT?
   Why? How can they be improved?

Break 2

Preparatory Study on Textile Products

second online stakeholder consultation

9-10 December 2024

Break until 12:15

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Waste generation
Recyclability and recycled content

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Waste generation - Definitions

— Textile waste is a textile product which the holder discards or intends or is required to discard ([17]).

— Post-industrial textile waste is textile waste generated during the manufacturing of textile products and their precursors (manufacturing of fibre, yarn and fabric, and during confectioning) (Huygens et al., 2023).

— Pre-consumer textile waste is textile waste generated as a result of discarding unsold textile products.

— Post-consumer textile waste is a textile product that have been discarded after consumption and use by the citizen or end-users of commercial and industrial activities (hotel, care, automotive, etc.). For this reason it is commonly referred to as household and commercial post-consumer textile waste, respectively (Huygens et al., 2023).

Pre-consumer textile waste is generated at manufacturer and retailer stages and it includes the following unsold products:

(a) Finished products that the manufacturers do not send to their customers due to order change or cancellation;

(b) Products that were placed on the market but were not purchased by consumers;

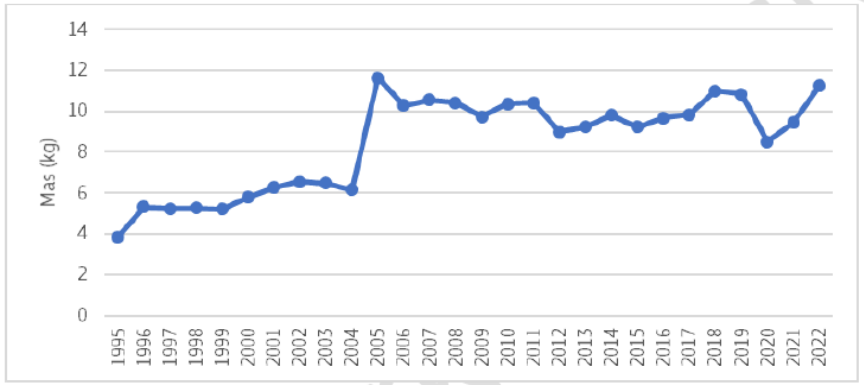
(c) Products returned to the retailer after being purchased;

(d) Products that the retailer decides not to place on the market.

This last type of pre-consumer textile waste includes obsolete products belonging to collections that the retailer considers not suitable for the fast changing market, and products that do not meet the retailer' standards, whose remanufacturing is not economically viable (Roberts et al., 2023).

Textile waste in numbers

Figure 4. Apparent consumption of textile apparel per capita in EU-27



Source: own production based on PRODCOM database (Sold production, exports and imports – DS-056120)

Consumption drives
the generation of waste

Table 11. Amount of textile apparel waste generated due to EU consumption in 2019

Type of waste	Mass (Mt/y)	Contribution to the total (%)
Post-consumer	5.2	87
Pre-consumer	0.16	3
Post-industrial	0.64	11
Total	6	100

Source: Huygens et al. (2023)

It is currently considered underestimated

It ranges from 25% to 45%
of all fabric used in the production

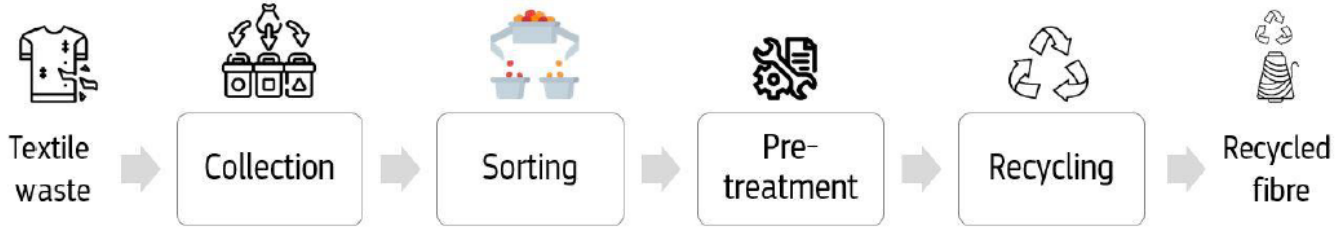
5% recycled in EU ("down-cycling"),
17% exported with unknown destiny,
78% landfilled or incinerated

- 10% recycled,
- 90% landfilled, incinerated,
or exported with unknown destiny

European Commission

Recycling system of textile waste

Figure 5. Recycling system of textile waste



Source: own elaboration using icons from www.flaticon.com

Status of recycling techniques

- Most used recycling technique is mechanical recycling, which processes mono-fibre textiles, preferably cotton and wool.
- Chemical recycling of MMCF is also implemented at operational scale.
- Chemical recycling of polyamide-rich textiles generate monomers, which can be processed to produce fibres of polyamide.
- Blends are still difficult to recycle – only wool recycling using hydrochloric acid and depolymerisation techniques processing PA6 are implemented at scale.

Table 16. Estimated percentages (%) of recycled fibres in recent years

Fibre	2019	2020	2021	2022
Polyester (PES)	14	15	15	14
Wool	NA	6	6	7
Polyamide (PA)	NA	2	2	2
Cotton	NA	0.96	1	1
MMCF	NA	0.4	0.5	0.5

N.B. Approximately 99% of the polyester recycled fibres come from plastic bottles made of polyethylene terephthalate (PET).

Source: Own elaboration based on Textile Exchange (2020(, DG GROW (2021b), Textile Exchange (2021), Textile Exchange (2022), Textile Exchange (2023)

How to assess recyclability

A recyclable textile apparel must have all these characteristics

1. It can be effectively collected;
2. It can be sorted, i.e. segregated from other textile waste and sent to the subsequent suitable recycling pathways;
3. It can be pre-treated before recycling, or can be sent directly to recycling without specific pre-treatment;
4. Its fibre content can be fully used as feedstock for one or more recycling techniques to produce recycled fibres usable in textile products;
5. It has no elements or substances in amounts that disrupt the collection, sorting, preparation for recycling and recycling, or that limit the use of the recycled fibre.

- No geographical limitations
- Do not refer to specific characteristics of the feedstock
- Do not refer to particular process techniques
- Point 4 guarantees the application of the recycled fibre in any textile product
- It is in line with the definition reported in the WFD
- It can be applied to all products in the scope of the PS

Description of product technologies – Recyclability

- BC are not recyclable;
- BAT are products that currently can be processed by recycling techniques implemented at scale:
  - (1) single-fibre textile apparel recycled via mechanical recycling,
  - (2) pure cotton textile apparel recycled via chemical recycling for the production of MMCFs,
  - (3) PA6-rich apparel recycled via chemical recycling for synthetic fibres,
  - (4) wool-rich blends recycled via chemical recycling based on hydrochloric acid.
- BNAT are products that can be processed with techniques currently at intermediate maturity level

In Task 6, design options will address technological neutrality, which is currently missing in this definition of BAT and BNAT.

Assessment and definition of recycled content

Two aspects:

1. The availability of recyclable textile apparel, which implies the production of a recycled fibre with performances suitable for the use in textile apparel;

   - It is connected to recyclability
   - It closes the loop
   - It is open to developments in spinning techniques

2. A verification system capable of tracking fibres coming from post-consumer textile waste.

   - It is based on the characteristics of the type of waste

The recycled content is the proportion, by mass, of recycled fibres coming from recyclable textile apparel disposed of as post-consumer waste.

Table 13. Description of the textile apparel waste in the context of the recyclability and the recycled content

Characteristic	Post-industrial	Pre-consumer	Post-consumer
Status of the material	Undamaged and clean fibres.	Undamaged and clean fibres.	Worn material with damaged fibres. It is often relatively dirty, with various form of stains and moist content, generating mould and hygienic problems.
Non-textile components	Absent	Present	Present
Knowledge of fibre composition	Known and detailed by the manufacturer.	Based on what is reported on the label in accordance with the TLR. The reading of one label allows the identification of fibre composition of the entire collection.	Based on the analysis of the item's surface via infrared spectroscopy.
Degree of heterogeneity	Very low – homogeneous waste	Low	Very high
Location of generation	Manufacturing stage (available in producing countries, which are mainly countries in Asia - see sections 5.1 and 5.2 in the 1st milestone)	- Manufacturing stage (available in producing countries, which are mainly countries in Asia - see sections 5.1 and 5.2 in the 1st milestone) - Retail stage (available in EU)	User stage (available in EU)
Sorting	Not always needed, because it is already sorted in the moment of generation.	Not always needed. - Products belonging to collections that not reach the customer are already sorted; - Returned products could need some sorting depending on the retailer logistic.	Needed
Pre-treatment	It is ready for recycling because it includes mainly cuts of fabrics. Potentially, only shredding is needed.	Needed	Needed

Table 13. Description of the textile apparel waste in the context of the recyclability and the recycled content

Characteristic	Post-industrial	Pre-consumer	Post-consumer
Regulating legislation	Most of the production occurs in Asian countries, where the authors did not find any legislation addressing the generation of this type of waste. Very little production occurs in EU. The generation of post-industrial waste generated in EU are not specifically regulated. The WFD sets only generic objectives to prevent waste generation. The shipment of post-industrial waste generated in EU is subjected to the WSR. The material described here as post-industrial waste could in some Member States be also identified as a by-product, which would put it out of the scope of the WSR.	Waste generated at manufacturing stage: - Not addressed by any legislation identified by the authors if production occurs outside EU; - Addressed by the ESPR, which bans destruction of unsold products, with exemption only for micro and small enterprises. Waste generated at retailer stage are addressed by the ESPR, which bans destruction of unsold products, with exemption only for micro and small enterprises. The shipment of post-industrial waste generated in EU are subjected to the WSR. However, unsold products that did not become waste are outside the scope of the WSR.	This type of waste is fully generated in EU and is addressed by the WFD (EPR and EoW), and the WSR.

TLR: Textile Labelling Regulation (1007/2011)
ESPR: Ecodesign for sustainable Product Regulation (2024/1781)
WFD: Waste Framework Directive (2008/98/EC)
EPR: Expended Producer Responsibility, under the WFD
EoW: End-of-Waste criteria, under the WFD
WSR: Waste Shipment Regulation (2024/1157)
The analysis does not include transportation of the waste because it depends on the location of the treatment facilities.

Source: own production

Waste generation
Recyclability and recycled content – Q&A

1. Do you agree with the framework adopted to describe recyclability? Why? How can it be improved?

2. Do you agree with the framework adopted to describe recycled content? Why? How can it be improved?

Environmental impacts

Assessment of environmental impacts and description of product technologies

The analysis of the ecosystem affecting the environmental impact of textile apparel shows the difficulty to identify in a rigid framework the characteristics of specific product technologies.

- The **BC** is described by:
  - Manufacturing process techniques adopted in China, India, and Bangladesh,
  - Business models promoting overproduction and overconsumption,
  - Users changing frequently their textile apparel,
  - Waste disposed to landfilling and incinerated in the EU and in third countries.
- The **BAT** is described by:
  - Manufacturing process techniques adopted in EU,
  - Business models and user behavior generating a production rate similar to 2004,
  - Waste recycled or incinerated in EU.
- The **BNAT** is more ambitious than BAT and takes into account all the BNAT reported for other product aspects.

Task 5 will address environmental assessment

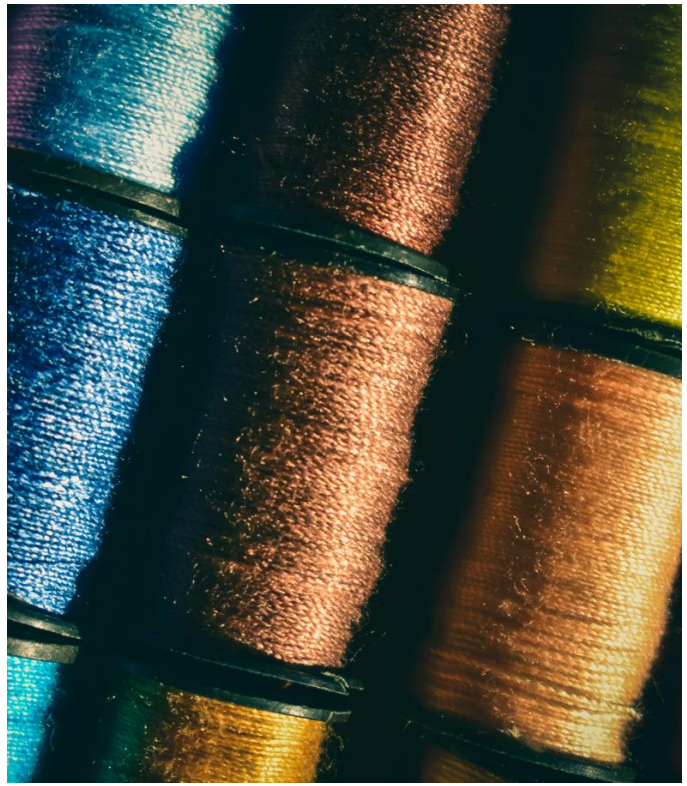
Environmental impacts
Q&A

1. Do you agree with the framework adopted to describe environmental impacts?
   Why? How can it be improved?

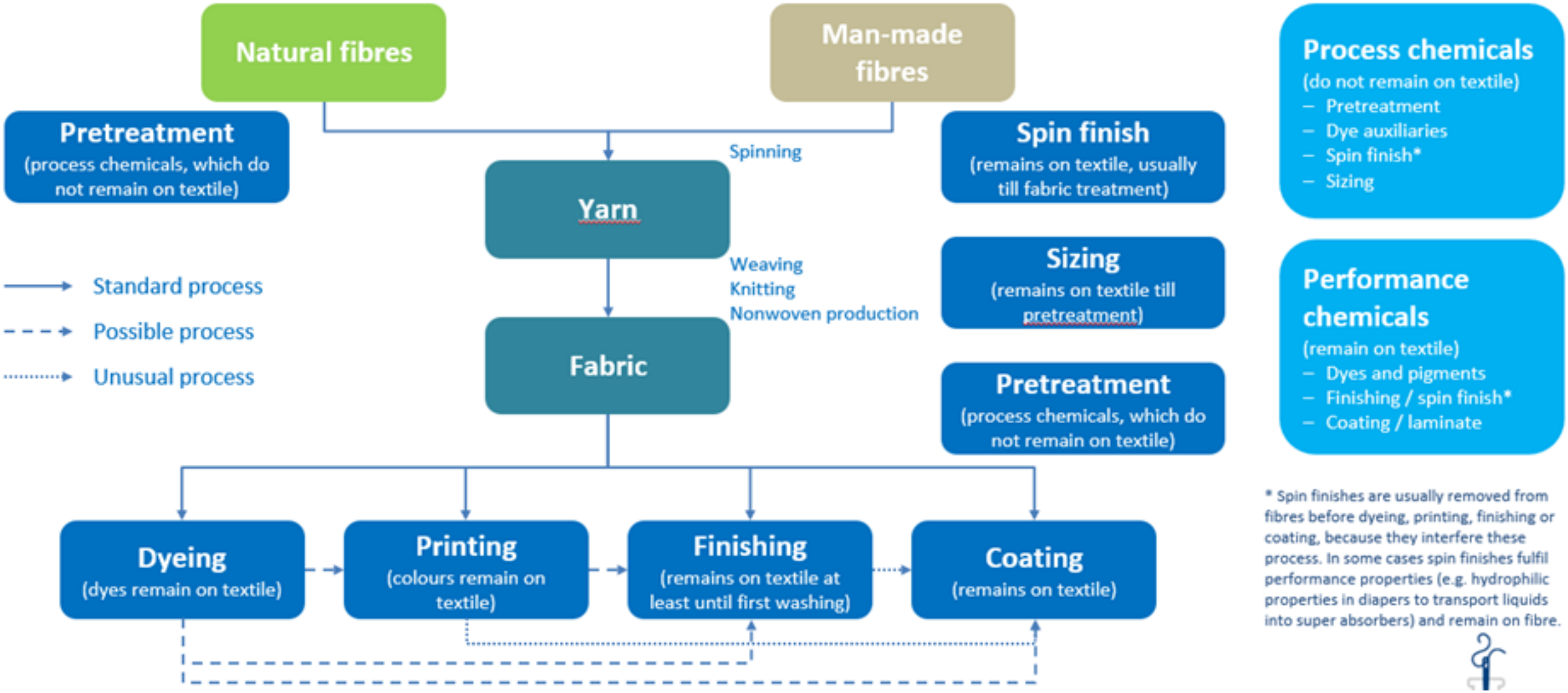
Substances of concern

Chemicals in textiles

- Many chemicals are used in textile manufacturing. From fibre production to finishing.
- Different reports suggest that the textiles sector uses between 8 000 – 15 000 different chemicals.
- Some are specific to the different fibres (cotton, polyester, wool, etc)
- Others to specific processes -> dyeing, stain repellence, etc
- Some are hazardous → KEMI (2014) reports 750 / 2450 substances were haz for human health, 440 for ENV



Source: Pexels.com



Source: Adapted from EUCTL, the European Chemistry for Textile and Leather Association

Chemicals in textiles

"*The use of **substances of concern** in textile production has negative effects on farmers, factory workers, and the surrounding environment. While there is little data on the volume of substances of concern used across the industry, it is recognised that **textile production discharges high volumes of water containing hazardous chemicals into the environment**. As an example, 20% of industrial water pollution globally is attributable to the dyeing and treatment of textiles*" (Ellen MacArthur Foundation, 2017).

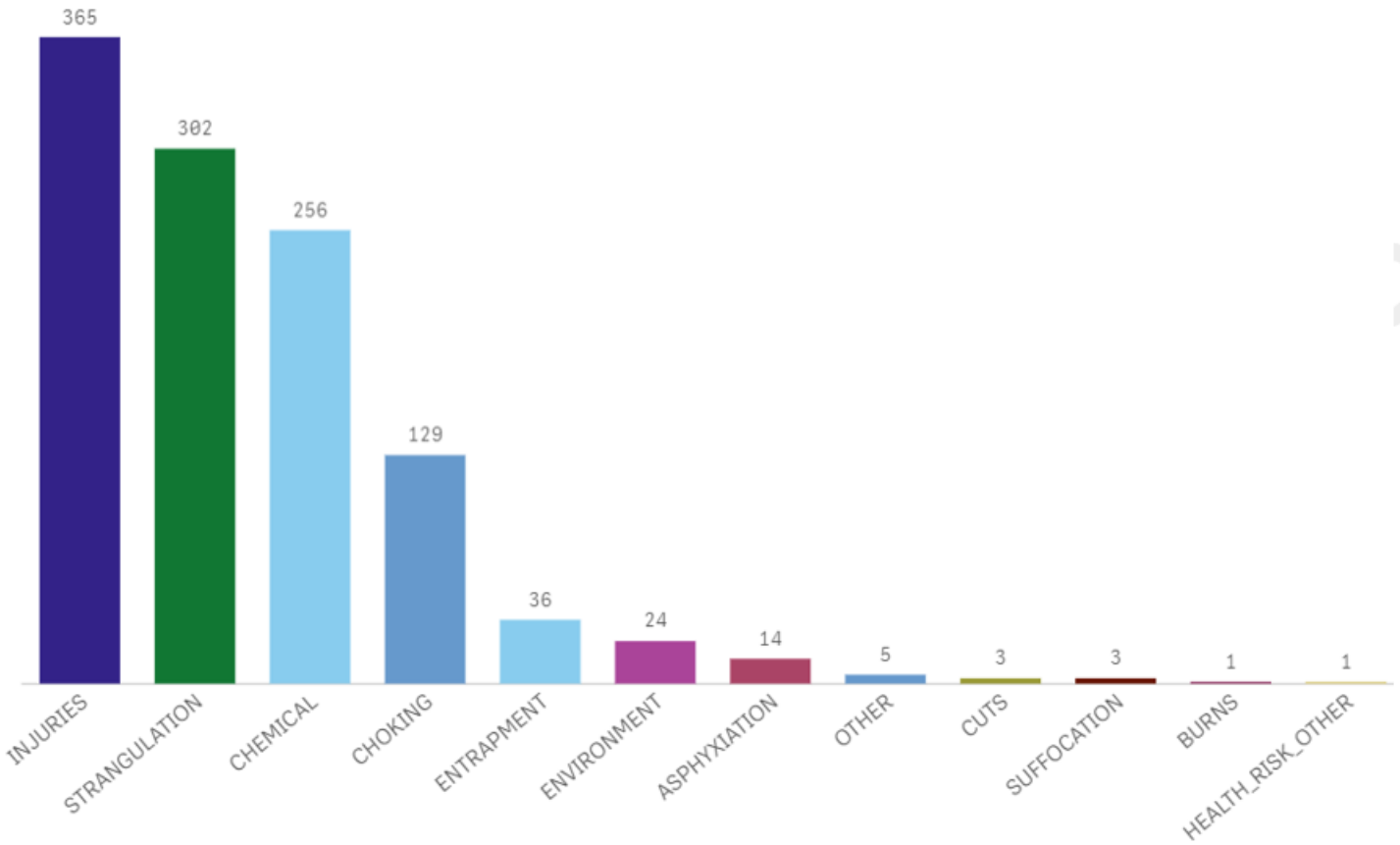
Source: Pexels.com

Chemicals in textiles

Chemical risks are the 3rd most common alert for “Clothing textiles” reported to Safety Gate (2019 – 2023)

Uneven level of concern about chemicals by users of apparel.

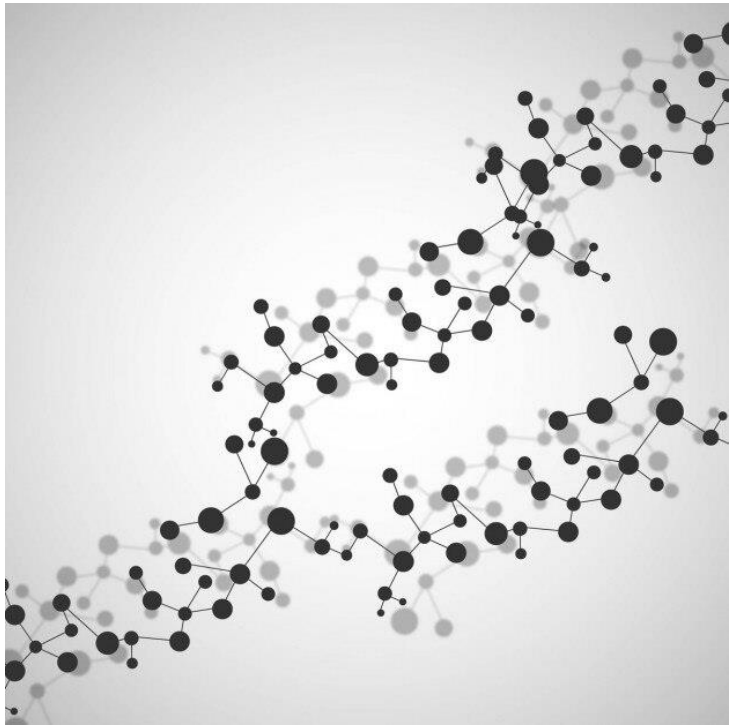
Information requirements under ESPR will contribute to better inform the public



Source: EU Safety Gate statistical tool. Available at this link. Last accessed on 13 November 2024

Chemicals in textiles

- Functional chemicals → dyes, pigments, plasticisers, oil / water repellents, stabilizers, etc
- Process chemicals (not intended to remain) → organic solvents, surfactants, softeners, acids and bases, etc
- Contaminants, degradation products → PAHs, aryl amines, formaldehyde from resins, etc.
- Legacy substances can remain in textile apparel and be reintroduced via recycled fibres or reused clothes
- Most textiles are manufactured outside of the EU
- Two approaches to chemical information → supply chain transparency and analytical



Designed by Freepik

Chemicals restricted in textiles

In the EU restrictions under **REACH** or the POPs Regulation are particularly relevant.

- 4 - Tris (2,3 dibromopropyl) phosphate;
- 7 - Tris(aziridinyl)phosphinoxide;
- 8 – Polybrominated biphenyls;
- 18 - Mercury compounds;
- 20 - Organostannic compounds;
- 43 - Azocolourants and Azodyes;
- 46/46a - Nonylphenol and Nonylphenol ethoxylates;
- 47 - Chromium VI compounds (relevant to leather articles);
- 68 - C9-C14 PFCAs and
- 72 - CMRs in textiles and footwear.
- 50 – (certain) polycyclic aromatic hydrocarbons;
- 51 and 52 (certain phthalates);
- 61 - Dimethylfumarate;
- 63 – Lead and its compounds. .

AFIRM and ZDHC Restricted Substance Lists
OEKOTEX 100 Standard
EU Ecolabel hazardous substances
+
Traceability / supply chain information systems in different stages of development

European Commission

Analysis of substances

- Many substances. Targeted / risk based testing to complement supply chain information.
- Suitable analytical methods required. Costly.
- Currently mostly used to check for compliance with existing restrictions → e.g. REACH4Textiles.
- waste textiles / recycled materials → e.g. H&M / IKEA study

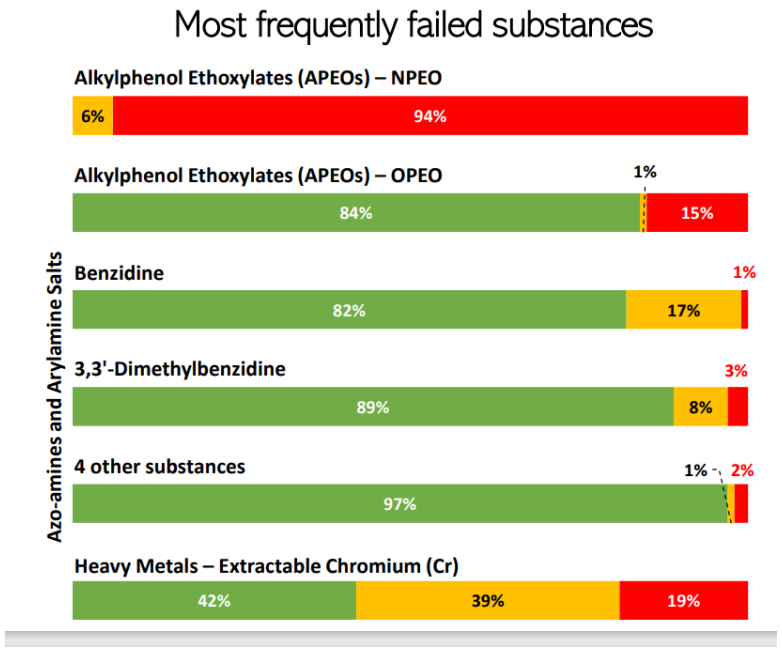
Detected chemicals

REACH 4 textiles

	Total tests	failures	%
Carcinogenic amines	279	1	0,36
PAH's	215	3	1,40
Phthalates	191	9	4,71
APEO	440	14	3,18
Metals	397	2	0,50
Nickel release*	43	3	6,97
SCCP/MCCP	170	3	1,76
Chromium VI*	33	8	24,24

* Ni and CrVI testing is very complex and needs further optimisation

WOOL
Post-consumer



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Challenges

- It is challenging to obtained granular information on substances used in the textile apparel sector
- Addressing Global value chains
- Different requirements / chemicals legislation / environmental legislation
- Challenges in defining a Base Case for the LCA / LCC
- Analytical challenges / verification
- Information management

Source: Pexels.com

Substances of concern
Q&A

1. Do you agree with the description made of substances of concern in textiles?
2. How can it be improved? What other aspects should be addressed
3. How effective are current means to identify and track SoC in the textile supply chain?

FURTHER DISCUSSION ON ESPR REQUIREMENTS, TOMORROW

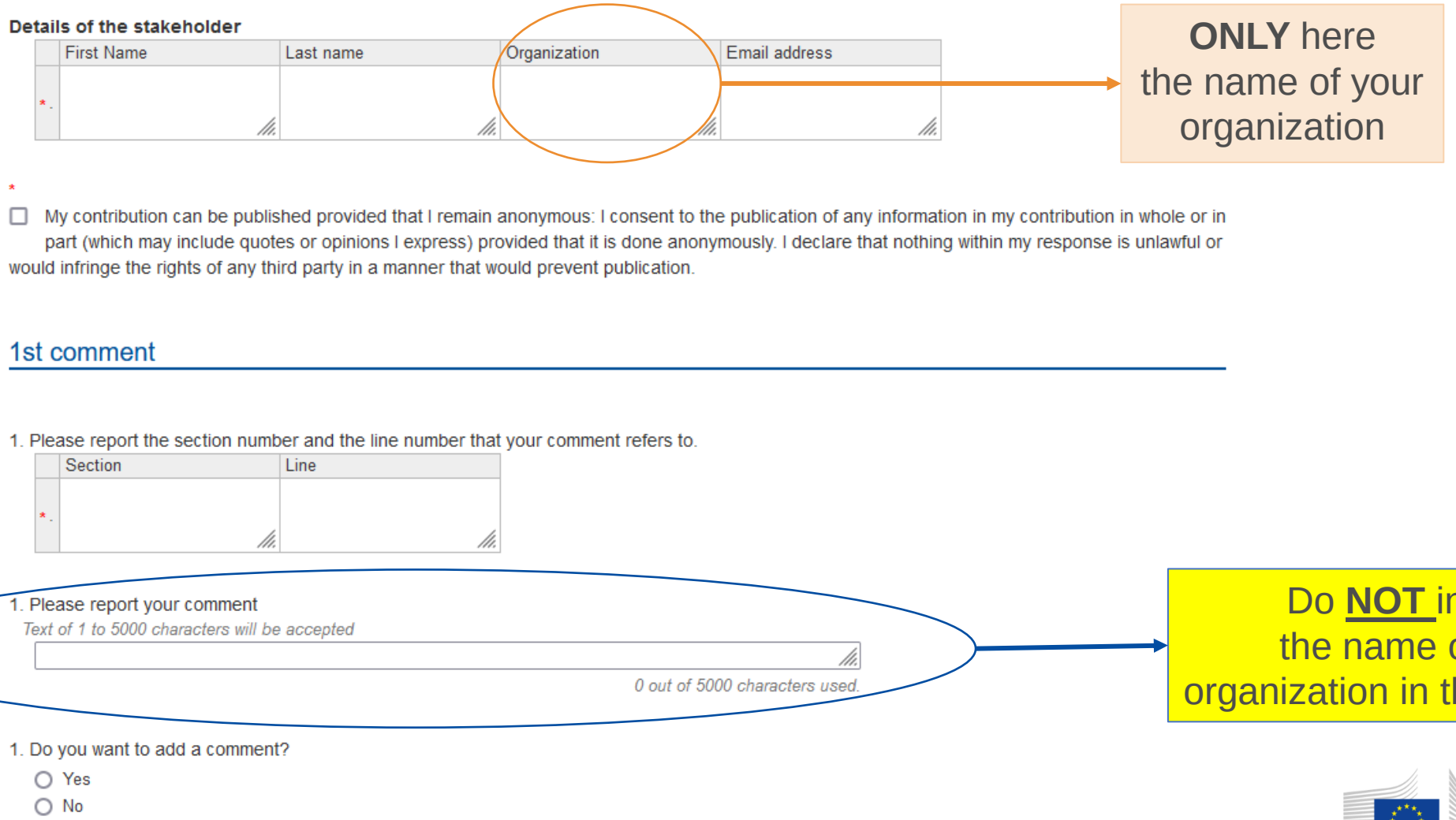
How to contribute to the consolidated text of the 2nd milestone

European Commission

Written comments to the working document

- What is most relevant is the **reasoning** and **evidence** supporting a position, rather than the number of contributions;
- JRC encourages stakeholders to **team up** and send well-argumented aggregated comments;
- JRC invites companies to provide comments **via their associations**;
- Registered stakeholders can provide written comments **via a web form (EU Survey) until 10 February**: link will be shared by email after the meeting;
- The form allows the submission of maximum 10 comments, but stakeholders can submit as many web forms as they wish;
- If you wish to share additional documents, you can send them via email to ***JRC-B5-TEXTILES@ec.europa.eu***

Written comments to the working document
The web form



Details of the stakeholder

	First Name	Last name	Organization	Email address
*				

ONLY here the name of your organization

*

☐ My contribution can be published provided that I remain anonymous: I consent to the publication of any information in my contribution in whole or in part (which may include quotes or opinions I express) provided that it is done anonymously. I declare that nothing within my response is unlawful or would infringe the rights of any third party in a manner that would prevent publication.

1st comment

1. Please report the section number and the line number that your comment refers to.

	Section	Line
*		

1. Please report your comment

Text of 1 to 5000 characters will be accepted

0 out of 5000 characters used.

Do **NOT** include the name of your organization in the comment

1. Do you want to add a comment?

- ○ Yes
- ○ No

European Commission

Written comments to the working document
The web form

5th comment

5. Please report the section number and the line number that your comment refers to.

	Section	Line
* .		

5. Please report your comment

Text of 1 to 5000 characters will be accepted

0 out of 5000 characters used.

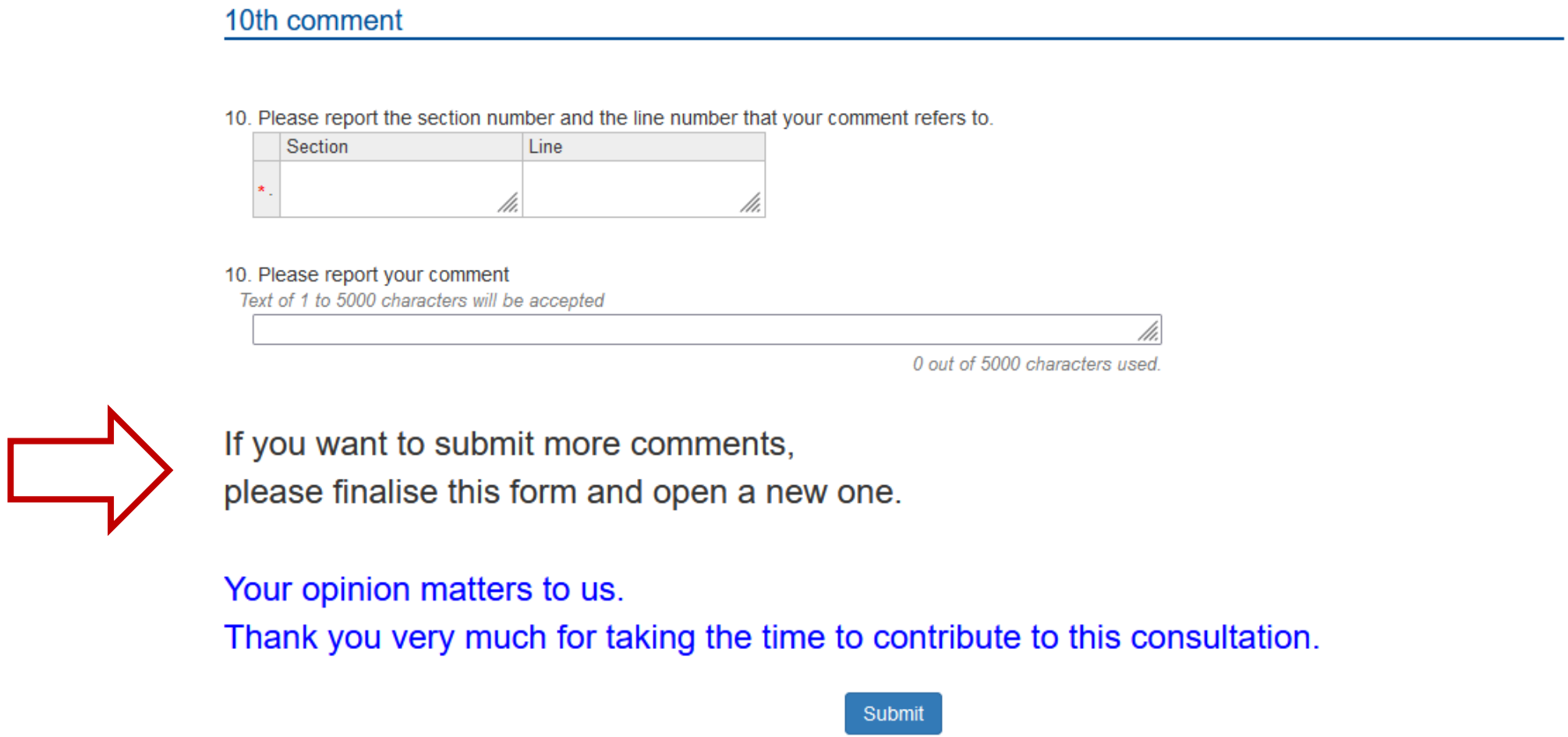
5. Do you want to add a comment?

- ○ Yes
- ◉ No

Your opinion matters to us.
Thank you very much for taking the time to contribute to this consultation.

Submit

Written comments to the working document
The web form


10th comment

10. Please report the section number and the line number that your comment refers to.

	Section	Line
* .		

10. Please report your comment

Text of 1 to 5000 characters will be accepted

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If you want to submit more comments,
please finalise this form and open a new one.

Your opinion matters to us.
Thank you very much for taking the time to contribute to this consultation.

Submit

Written comments to the working document Q&A

Any questions?

Closing remarks

European Commission

Thank you

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