

**PEF – Product Environmental Footprint
Men's Jackets and Suits 100% Wool
2023**

Synthesis

CANALI

Rev00 of 06 December 2024

This study was conducted in accordance with the PEF method defined by the Commission Recommendation (EU) 2021/2279. Independent external auditor, Certiquality S.r.l., Statement No. PEF017/24

PEF Canali 2023 – Results Overview

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Introduction

The Product Environmental Footprint (PEF) is a Life Cycle Assessment (LCA) methodology defined by the European Union.

The purpose is to provide a common Europe-wide measure of the environmental impacts of a product throughout its entire life cycle, using 16 different impact indicators.

The system under study is the production chain for the manufacturing of Canali's 100% wool jackets and suits.

Organisation

A leading manufacturer of luxury tailored garments and proponent of typically Italian masculine elegance, since 1934 Canali S.p.A. has been promoting traditional craftsmanship and Made in Italy, focusing on fabric quality, attention to detail and constant innovation and creativity in its sartorial tradition.

Canali S.p.A. quantified the impact of the entire organisation (Organisation Environmental Footprint) for the activities carried out in the year 2023. This study represents a more in-depth version of this analysis, quantifying the environmental performance of some representative products and in particular pure wool jackets and suits manufactured by the organisation during the reference year.

The results of the study are intended to be an internal tool within the organisation to investigate the contributions of the various phases of the life cycle of its activities, so that they can be oriented towards reducing its environmental impact and a conscious and ethically oriented use of all resources, including energy.

The results of the study can be used to enhance the organisation's performance with respect to its customers (B2C) as well, however, the study is not intended to directly corroborate comparisons or comparative statements to be disclosed to the public.

Organisation

Organisation:	Canali S.p.A.
Registered Office	Via Lombardia, 17, 20845 Sovico MB
Production sector	Manufacture of wearing apparel, except fur apparel
Description	Luxury tailored garments for men
ATECO Code	14.1
Reference year	01-01-2023 / 31-12-2023

Production Sites included	Address
Sovico	Sovico Logistics, Via Lombardia 17 (MB)
Sovico V.Le Monza	Sovico Logistics, Viale Monza 24 (MB)
Ancon	Filottrano Via Schiavoni 9
Dalmas	S.M. Nuova Industrial Zone Pradellona
Pantalonificio Marche	Filottrano Via Dell'Industria 162
Gissi	Gissi, Industrial Zone
Triuggio	Via Pellico 2 - Triuggio

Product Description

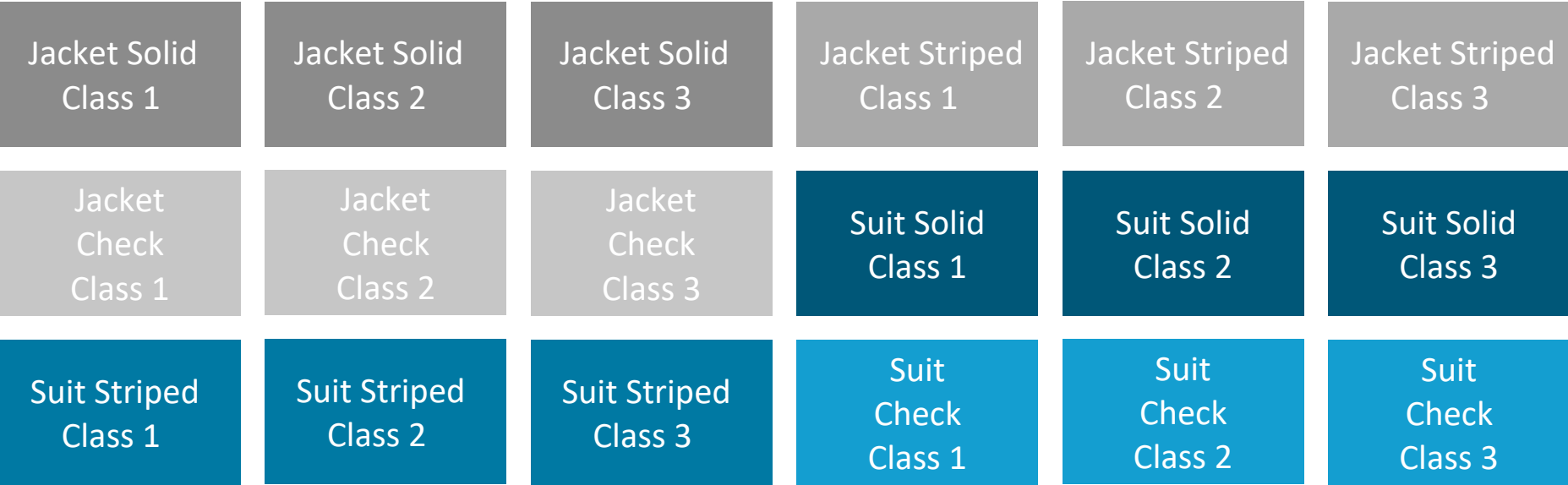
- The Canali PEF analyses two emblematic models, selected for their significance in terms of production volumes and their symbolic value within the Canali collection: a 100% wool-lined men's jacket and suit, including packaging.

Functional Unit	
What	Provide a wearing apparel to fulfil the customer's needs for one-time use.
How much	<ul style="list-style-type: none"> 1 men's jacket size EU 50, IT 54 incl. packaging, as per bill of materials. 1 men's suit size EU 50, IT 54 incl. packaging, as per bill of materials.
How well	100% wool men's jackets/suits, in good used condition, suitable for their intended purpose.
How Long	<p>One use. This aspect includes the jacket durability parameters, the manner and frequency of cleaning and the quality of the product.</p> <p>The expected life of the jackets is 151 uses considering 20 uses before each cleaning. The expected life of the suits is 129 uses considering 10 uses before each cleaning.</p>
Reference year	2024

The functional unit is defined on the basis of the most recent indications from the PEFCR Transition phase development on apparel. (DRAF PEFCR (Product Environmental Footprint Category Rule – Apparel and Footwear - Version 2.1; 26 July 2024; Valid to: TBC))

Identified Clusters

- The 100% wool men's jackets and suits were grouped into clusters to ensure that the environmental footprint results among the products analysed were less than 10%.

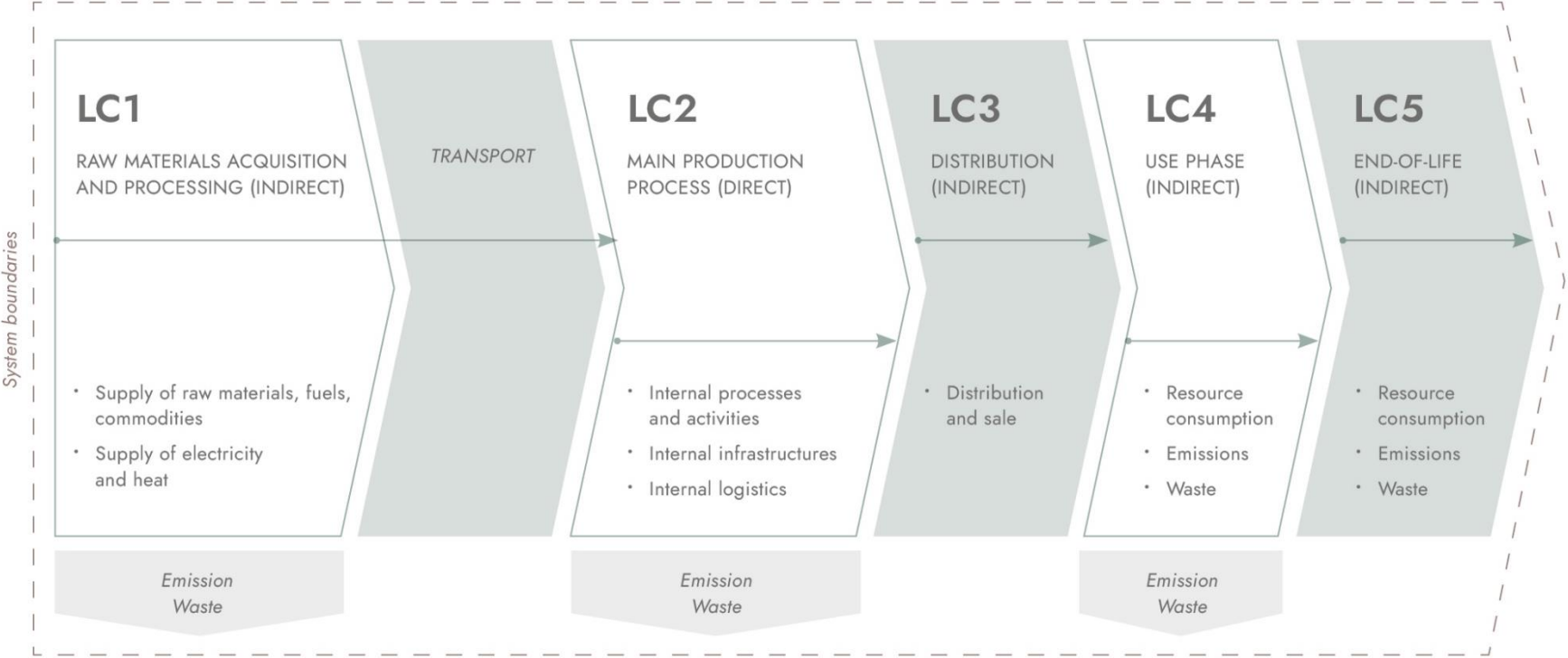


- Class 1: fabric weight 220-250 g/ml
- Class 2: fabric weight 250-280 g/ml
- Class 3: fabric weight 280-310 g/ml

Phases of the Life Cycle

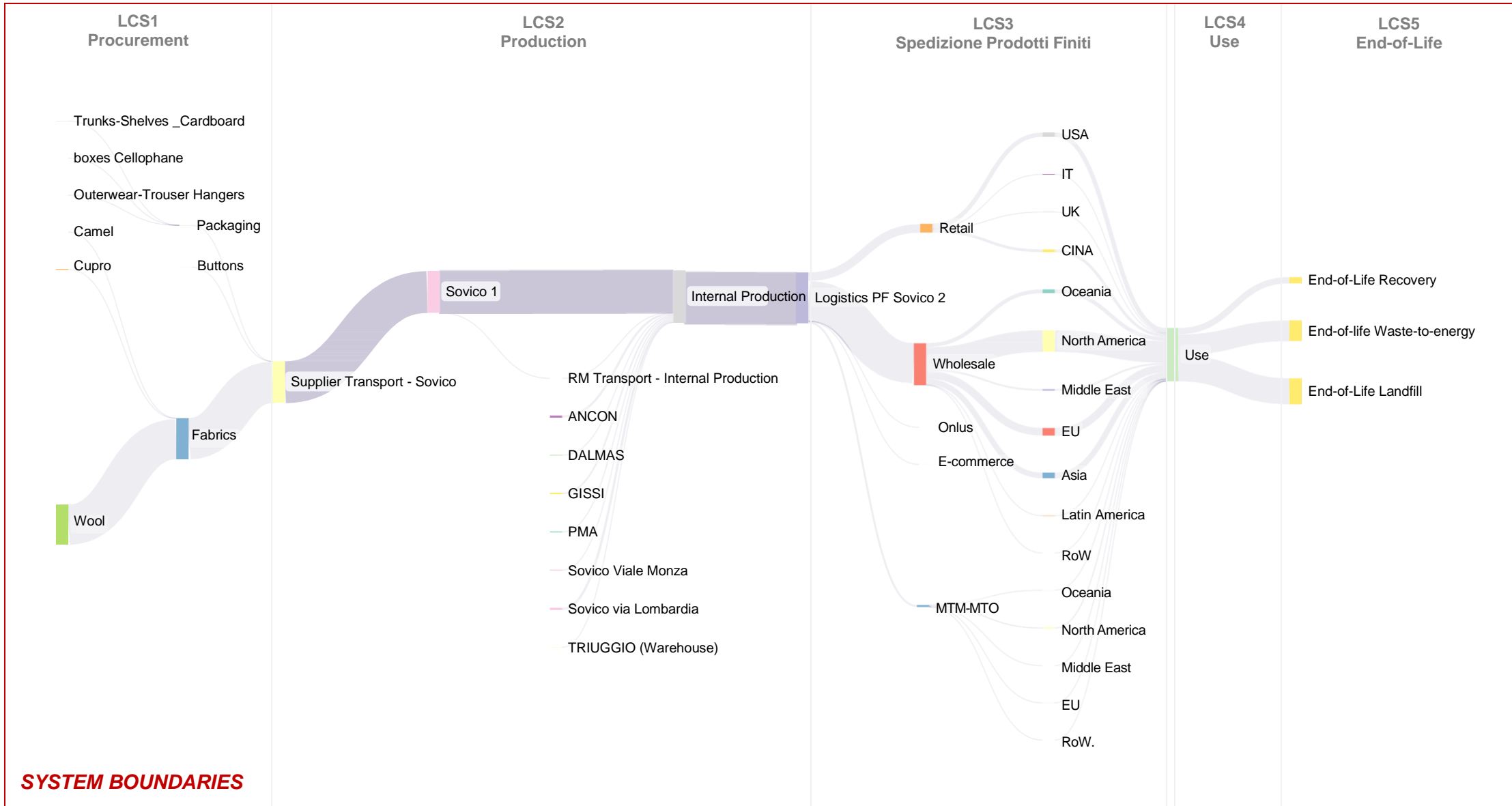
- The system boundaries determine the life cycle phases that are part of the study. The study is defined as 'cradle-to-grave', meaning it includes both the use and end-of-life phases of the product.

PEF: SYSTEM BOUNDARIES*



* LC=Life Cycle stage.

Detail of the system boundaries



Data Quality, Assumptions, Limitations and Cut-Off

- Following what is laid out in the specific management procedure, which defines at company level how input and output data should be collected, the sources and respective responsibilities, the organisation has compiled an inventory of all inputs and outputs for its proprietary processes.
- The quality of the inventory data was **very good (DQR<2)**
- The wool fabric, the main raw material of the production process, was modelled based on the document 'National Voluntary Scheme Made Green in Italy Product Category Rule (CPR) of Fabrics of combed wool or combed fine hair; Fabrics of coarse hair and horsehair [NACE 13.20.12]' (Version 1.0; Validity: 25/01/2028). The model was regionalised in terms of electricity consumption, water consumption, and land use based on the origins of the wool during the reference year.
- The other fabrics used by the organisation during the reference year were modelled based on the processes in the EF 3.1 database, covering the consumption of resources, energy, water consumption and emissions, and waste production from the fibre production stage, followed by the spinning, weaving, dyeing and finishing of the fabric, as well as transport along the different stages of the supply chain. The process yields are those provided by the EF3.1 database.
- Specific data on incoming materials were also collected in terms of suppliers, distances and modes of transport, energy consumption, water discharge and air emissions, waste production and transport.
- The electricity purchased by the organisation, and in relation to contract manufacturing, was modelled using the Italian Residual Mix in the reference year. It is specified that renewable electricity has not been purchased for 2023.
- The exclusion of specific consumption items for which no reliable data could be found in the databases is in no case higher than 1% of the total by mass.

Environmental Footprint Results

JACKETS - 1 day of use										
Impact indicators		Jacket Unit Class 1	Jacket Unit Class 2	Jacket Unit Class 3	Jacket Striped Class 1	Jacket Striped Class 2	Jacket Striped Class 3	Jacket Check Class 1	Jacket Check Class 2	Jacket Check Class 3
Acidification	mol H+ eq	9,86E-03	1,04E-02	1,11E-02	1,04E-02	1,10E-02	1,18E-02	1,11E-02	1,17E-02	1,26E-02
Climate change	kg CO ₂ eq	0.72	0.74	0.78	0.75	0.78	0.82	0.79	0.82	0.86
Climate change - Biogenic	kg CO ₂ eq	1,79E-01	1,89E-01	2,05E-01	1,90E-01	2,01E-01	2,18E-01	2,04E-01	2,17E-01	2,36E-01
Climate change - Fossil	kg CO ₂ eq	5,02E-01	5,15E-01	5,34E-01	5,23E-01	5,37E-01	5,58E-01	5,42E-01	5,58E-01	5,80E-01
Climate change - LU and LU change	kg CO ₂ eq	3,55E-02	3,76E-02	4,06E-02	3,77E-02	3,99E-02	4,31E-02	4,05E-02	4,30E-02	4,65E-02
Ecotoxicity, freshwater	CTUe	4.31	4.46	4.68	4.48	4.64	4.88	4.68	4.86	5.13
Particulate matter	disease inc.	7,78E-08	8,15E-08	8,68E-08	8,17E-08	8,57E-08	9,14E-08	8,67E-08	9,11E-08	9,74E-08
Eutrophication, marine	kg N eq	1,98E-03	2,07E-03	2,19E-03	2,07E-03	2,17E-03	2,31E-03	2,19E-03	2,30E-03	2,45E-03
Eutrophication, freshwater	kg P eq	1,59E-04	1,65E-04	1,73E-04	1,67E-04	1,73E-04	1,82E-04	1,74E-04	1,81E-04	1,91E-04
Eutrophication, terrestrial	mol N eq	4,02E-02	4,25E-02	4,57E-02	4,26E-02	4,50E-02	4,86E-02	4,57E-02	4,84E-02	5,23E-02
Human toxicity, cancer	CTUh	9,80E-10	1,01E-09	1,06E-09	1,03E-09	1,06E-09	1,11E-09	1,07E-09	1,11E-09	1,16E-09
Human toxicity, non-cancer	CTUh	3,93E-09	4,04E-09	4,20E-09	4,09E-09	4,21E-09	4,38E-09	4,23E-09	4,36E-09	4,55E-09
Ionising radiation	kBqU-235eq	1,82E-02	1,86E-02	1,91E-02	1,88E-02	1,92E-02	1,97E-02	1,92E-02	1,96E-02	2,01E-02
Land use	Pt	16.96	17.32	17.86	17.35	17.75	18.32	17.85	18.29	18.92
Ozone depletion	kg CFC11 eq	2,00E-08	2,05E-08	2,12E-08	2,04E-08	2,09E-08	2,17E-08	2,08E-08	2,13E-08	2,21E-08
Photochemical ozone formation	k NMVOCeq	1,60E-03	1,64E-03	1,71E-03	1,66E-03	1,71E-03	1,78E-03	1,72E-03	1,77E-03	1,84E-03
Resource use, fossils	MJ	6.19	6.32	6.51	6.43	6.57	6.78	6.63	6.78	7
Resource use, minerals and metals	kg Sb eq	1,46E-06	1,51E-06	1,56E-06	1,54E-06	1,58E-06	1,65E-06	1,59E-06	1,64E-06	1,71E-06
Water use	m ³ depriv.	4,80E-01	4,97E-01	5,22E-01	5,01E-01	5,20E-01	5,47E-01	5,26E-01	5,47E-01	5,77E-01

Environmental Footprint Results

SUITS - 1 day of use										
Impact indicators		Suit Solid Class 1	Suit Solid Class 2	Suit Solid Class 3	Suit Striped Class 1	Suit Striped Class 2	Suit Striped Class 3	Suit Check Class 1	Suit Check Class 2	Suit Check Class 3
Acidification	mol H+ eq	1,75E-02	1,86E-02	2,06E-02	1,80E-02	1,92E-02	2,12E-02	1,92E-02	2,04E-02	2,26E-02
Climate change	kg CO ₂ eq	1.23	1.28	1.38	1.26	1.32	1.42	1.32	1.38	1.49
Climate change - Biogenic	kg CO ₂ eq	3,21E-01	3,43E-01	3,84E-01	3,30E-01	3,54E-01	3,96E-01	3,54E-01	3,80E-01	4,26E-01
Climate change - Fossil	kg CO ₂ eq	8,42E-01	8,70E-01	9,21E-01	8,67E-01	8,96E-01	9,48E-01	8,97E-01	9,28E-01	9,85E-01
Climate change - LU and LU change	kg CO ₂ eq	6,34E-02	6,77E-02	7,55E-02	6,53E-02	6,98E-02	7,79E-02	6,99E-02	7,48E-02	8,36E-02
Ecotoxicity, freshwater	CTUe	9.63	9.96	10.55	9.79	10.13	10.74	10.13	10.5	11.16
Particulate matter	disease inc.	1,42E-07	1,50E-07	1,64E-07	1,45E-07	1,53E-07	1,68E-07	1,53E-07	1,62E-07	1,78E-07
Eutrophication, marine	kg N eq	3,43E-03	3,62E-03	3,96E-03	3,52E-03	3,72E-03	4,07E-03	3,72E-03	3,93E-03	4,31E-03
Eutrophication, freshwater	kg P eq	2,72E-04	2,84E-04	3,06E-04	2,80E-04	2,92E-04	3,14E-04	2,93E-04	3,06E-04	3,31E-04
Eutrophication, terrestrial	mol N eq	7,17E-02	7,65E-02	8,50E-02	7,38E-02	7,88E-02	8,76E-02	7,89E-02	8,42E-02	9,39E-02
Human toxicity, cancer	CTUh	1,67E-09	1,74E-09	1,86E-09	1,72E-09	1,79E-09	1,92E-09	1,79E-09	1,87E-09	2,00E-09
Human toxicity, non-cancer	CTUh	7,96E-09	8,20E-09	8,65E-09	8,11E-09	8,37E-09	8,83E-09	8,36E-09	8,63E-09	9,12E-09
Ionising radiation	kBqU-235eq	3,42E-02	3,51E-02	3,67E-02	3,49E-02	3,58E-02	3,74E-02	3,56E-02	3,66E-02	3,83E-02
Land use	Pt	24.58	25.36	26.76	24.92	25.74	27.19	25.74	26.62	28.21
Ozone depletion	kg CFC11 eq	4,87E-08	5,02E-08	5,29E-08	4,90E-08	5,05E-08	5,32E-08	4,98E-08	5,13E-08	5,41E-08
Photochemical ozone formation	k NMVOCeq	2,74E-03	2,83E-03	3,00E-03	2,80E-03	2,90E-03	3,07E-03	2,90E-03	3,00E-03	3,19E-03
Resource use, fossils	MJ	10.28	10.56	11.07	10.6	10.89	11.41	10.89	11.21	11.77
Resource use, minerals and metals	kg Sb eq	3,96E-06	4,05E-06	4,20E-06	4,04E-06	4,13E-06	4,29E-06	4,14E-06	4,24E-06	4,41E-06
Water use	m ³ depriv.	9,15E-01	9,53E-01	1,02E+00	9,39E-01	9,77E-01	1,05E+00	9,78E-01	1,02E+00	1.10E+00

Normalisation and Weighting of Results

The identification of the most relevant categories was achieved through the normalisation and weighting of the results.

Normalization: *the* environmental impact values have been normalised, that is, divided by a 'reference value' so as to be able to establish the magnitude of each environmental effect against a reference value, represented by the average annual emission factors per person worldwide.

Weighting: the normalised environmental footprint results are multiplied by a set of weighting factors, which reflect the relative perceived importance of the impact categories considered. The weighted environmental footprint results can then be compared to assess their relative importance. Weighting allows for the determination of the scale of each environmental issue and makes it possible to identify significant impact categories that together represent 80% of the total environmental impact.

Relevant Categories, Phases and Processes (>80%)

Jacket Check Class 3						
Impact Category	Most relevant phases of the life cycle		Relevant process 1	Relevant process 2	Relevant process 3	Elemental flow
Climate change	LCS1 (Raw materials acquisition)	LCS2 (Manufacturing)	Fabric 100% wool	Energy consumption	Packaging accessories	<i>CO₂, fossil, CH₄ Biogenic</i> <i>N₂₀</i>
	69%	19%	57%	21%	20%	
Acidification	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃</i>
	93%		73%	22%		
Particulate matter	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃</i> <i>Particulates <2.5</i>
	95%		67%	30%		
Eutrophication, terrestrial	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃</i>
	96%		77%	21%		
Resource use, fossils	LCS1 (Raw materials acquisition)	LCS2 (Manufacturing)	Energy consumption	Fabric 100% wool	Packaging accessories	<i>Natural Gas</i> <i>Oil</i> <i>Coal</i>
	46%	34%	41%	35%	19%	
Water use	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>Water, IT</i> <i>Water AU</i>
	84%		54%	33%		

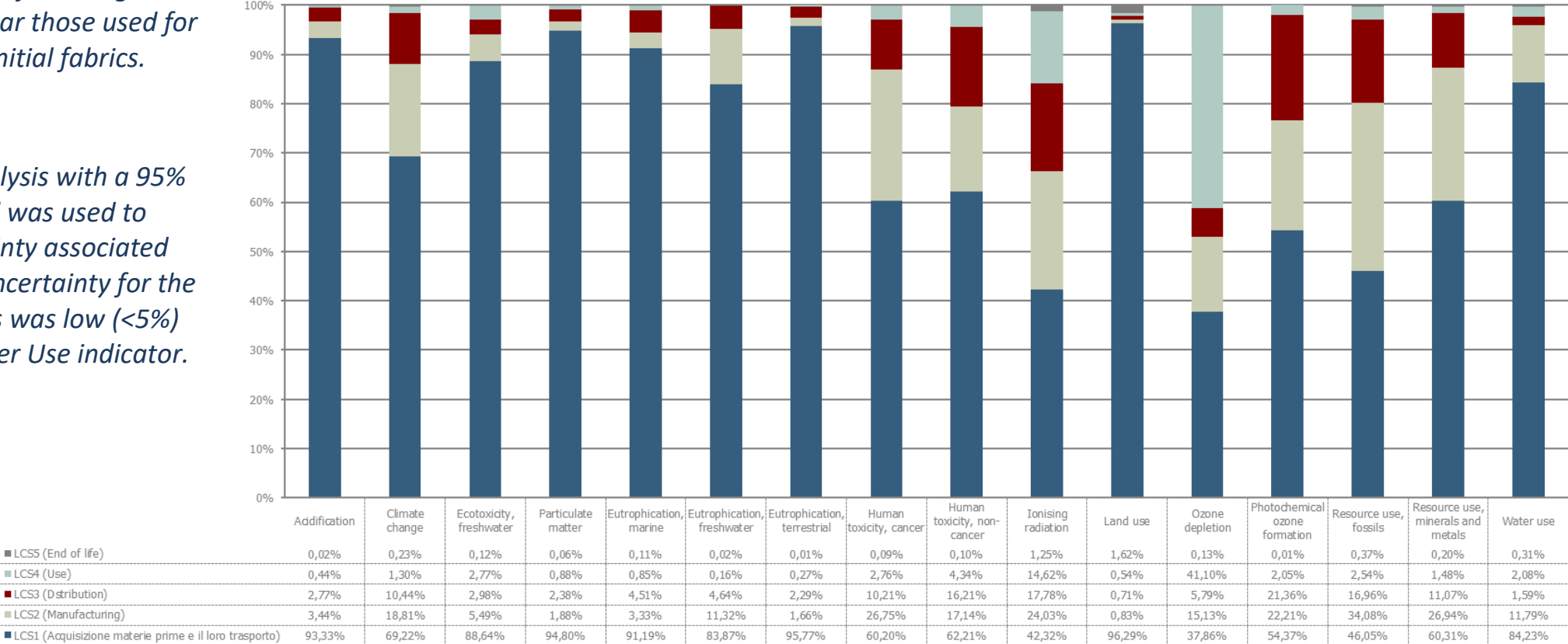
Relevant Categories, Phases and Processes (>80%)

Suit Check Class 3						
Impact Category	Most relevant phases of the life cycle		Relevant process 1	Relevant process 2	Relevant process 3	Elemental flow
Climate change	LCS1 (Raw materials acquisition)	LCS2 (Manufacturing)	Fabric 100% wool	Packaging accessories	Energy consumption	<i>CO₂, fossil, CH₄ Biogenic N₂O</i>
	73%	16%	64%	17%	17%	
Acidification	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃</i>
	94%		80%	16%		
Particulate matter	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃ Particulates <2.5</i>
	95%		72%	26%		
Eutrophication, terrestrial	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>NH₃</i>
	96%		84%	15%		
Resource use, fossils	LCS1 (Raw materials acquisition)	LCS2 (Manufacturing)	Fabric 100% wool	Energy consumption	Packaging accessories	<i>Natural Gas Oil Coal</i>
	51%	29%	41%	35%	20%	
Water use	LCS1 (Raw materials acquisition)		Fabric 100% wool	Packaging accessories		<i>Water, IT Water AU</i>
	86%		56%	34%		

Interpretation of Results

- The most relevant phase is the procurement of raw materials for the manufacturing of wearing apparel, in particular those used for the production of initial fabrics.
- A Monte Carlo Analysis with a 95% confidence interval was used to assess the uncertainty associated with the results. Uncertainty for the relevant categories was low (<5%) except for the Water Use indicator.

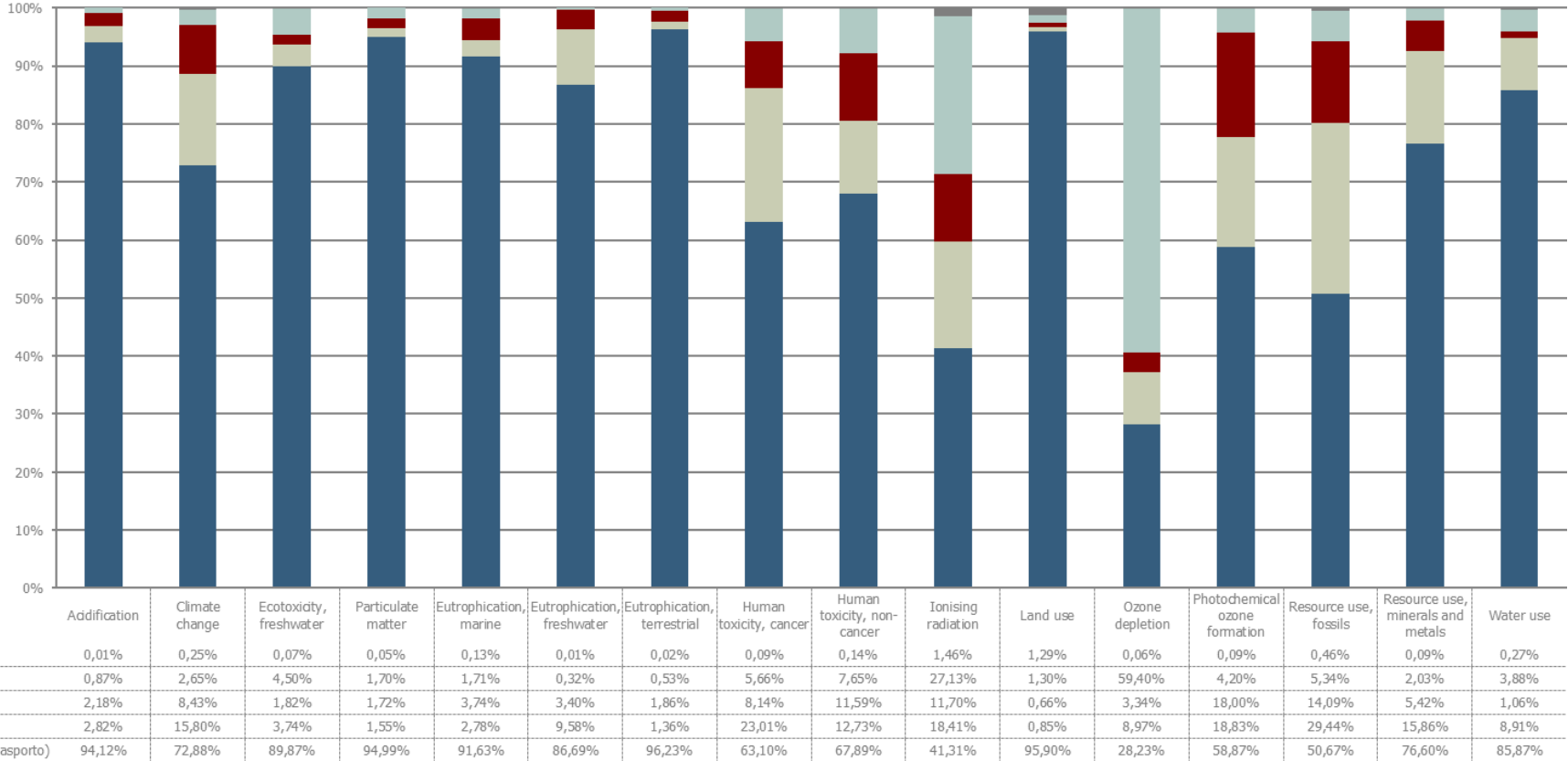
PEF Canali - 2023: intero ciclo di vita
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Annex 1 – Information on the Study

This synthesis of the Canali organisation's environmental footprint refers to the 'Product Environmental Footprint (PEF) Canali 2023 Environmental Footprint Assessment Study' (Revision No. 01 of 06/12/2024).

Both documents have been subjected to an independent verification process by Certiquality Srl.

The study was carried out using the European Union Environmental Footprint (PEF) Method.

The software used is Simapro 9.6, the database is Ecoinvent 3.10, and the calculation method is the Environmental Footprint 3.1.

The PEF study is conducted with reference to the following international documents and standards:

- ISO 14040:2021 Environmental management - Life cycle assessment - Principles and Framework
- ISO 14044:2021 Environmental management - Life cycle assessment - Requirements and Guidelines
- Commission Recommendation (EU) 2021/2279 on the use of environmental footprint methods to measure and communicate the life cycle environmental performance of products and organisations
- Draft PEFCR (Product Environmental Footprint Category Rule) – Apparel and Footwear - Version 2.1; 26 July 2024; Valid to: TBC
- National Voluntary Scheme 'Made Green in Italy' Product Category Rule (PCR) for Fabrics of combed wool or combed fine hair; Fabrics of coarse hair and horsehair [NACE 13.20.12] (Version 1.0; Validity: 25/01/2028).

Annex 2 – Normalized PEF Results

JACKETS – NORMALIZED RESULTS										
Impact indicators		Jacket Solid Class 1	Jacket Solid Class 2	Jacket Solid Class 3	Jacket Striped Class 1	Jacket Striped Class 2	Jacket Striped Class 3	Jacket Check Class 1	Jacket Check Class 2	Jacket Check Class 3
Acidification	--	1,77E-04	1,87E-04	2,00E-04	1,88E-04	1,98E-04	2,12E-04	2,00E-04	2,11E-04	2,28E-04
Climate change	--	9,48E-05	9,82E-05	1,03E-04	9,94E-05	1,03E-04	1,08E-04	1,04E-04	1,08E-04	1,14E-04
Ecotoxicity, freshwater	--	7,60E-05	7,86E-05	8,25E-05	7,90E-05	8,19E-05	8,61E-05	8,26E-05	8,58E-05	9,04E-05
Particulate matter	--	1,31E-04	1,37E-04	1,46E-04	1,37E-04	1,44E-04	1,54E-04	1,46E-04	1,53E-04	1,64E-04
Eutrophication, marine	--	1,01E-04	1,06E-04	1,12E-04	1,06E-04	1,11E-04	1,18E-04	1,12E-04	1,18E-04	1,25E-04
Eutrophication, freshwater	--	9,91E-05	1,03E-04	1,08E-04	1,04E-04	1,08E-04	1,13E-04	1,09E-04	1,13E-04	1,19E-04
Eutrophication, terrestrial	--	2,28E-04	2,40E-04	2,59E-04	2,41E-04	2,55E-04	2,75E-04	2,59E-04	2,74E-04	2,96E-04
Human toxicity, cancer	--	5,68E-05	5,86E-05	6,12E-05	5,94E-05	6,14E-05	6,42E-05	6,19E-05	6,41E-05	6,72E-05
Human toxicity, non-cancer	--	3,05E-05	3,14E-05	3,27E-05	3,18E-05	3,27E-05	3,41E-05	3,28E-05	3,38E-05	3,53E-05
Ionising radiation	--	4,32E-06	4,40E-06	4,52E-06	4,46E-06	4,55E-06	4,68E-06	4,54E-06	4,64E-06	4,77E-06
Land use	--	2,07E-05	2,11E-05	2,18E-05	2,12E-05	2,17E-05	2,24E-05	2,18E-05	2,23E-05	2,31E-05
Ozone depletion	--	3,81E-07	3,91E-07	4,05E-07	3,90E-07	3,99E-07	4,14E-07	3,96E-07	4,07E-07	4,22E-07
Photochemical ozone formation	--	3,92E-05	4,02E-05	4,18E-05	4,07E-05	4,18E-05	4,35E-05	4,21E-05	4,33E-05	4,52E-05
Resource use, fossils	--	9,52E-05	9,72E-05	1,00E-04	9,90E-05	1,01E-04	1,04E-04	1,02E-04	1,04E-04	1,08E-04
Resource use, minerals and metals	--	2,30E-05	2,37E-05	2,46E-05	2,42E-05	2,49E-05	2,59E-05	2,51E-05	2,58E-05	2,69E-05
Water use	--	4,18E-05	4,33E-05	4,55E-05	4,37E-05	4,53E-05	4,77E-05	4,59E-05	4,77E-05	5,03E-05

Annex 2 – Normalized PEF Results

SUI TS – NORMALIZED RESULTS										
Impact indicators		Suit Solid Class 1	Suit Solid Class 2	Suit Solid Class 3	Suit Striped Class 1	Suit Striped Class 2	Suit Striped Class 3	Suit Check Class 1	Suit Check Class 2	Suit Check Class 3
Acidification	--	3,15E-04	3,35E-04	3,70E-04	3,24E-04	3,45E-04	3,81E-04	3,45E-04	3,67E-04	4,07E-04
Climate change	--	1,62E-04	1,70E-04	1,83E-04	1,67E-04	1,75E-04	1,88E-04	1,75E-04	1,83E-04	1,98E-04
Ecotoxicity, freshwater	--	1,70E-04	1,76E-04	1,86E-04	1,73E-04	1,79E-04	1,89E-04	1,79E-04	1,85E-04	1,97E-04
Particulate matter	--	2,38E-04	2,51E-04	2,75E-04	2,44E-04	2,58E-04	2,82E-04	2,58E-04	2,72E-04	2,99E-04
Eutrophication, marine	--	1,76E-04	1,85E-04	2,03E-04	1,80E-04	1,90E-04	2,08E-04	1,90E-04	2,01E-04	2,21E-04
Eutrophication, freshwater	--	1,69E-04	1,77E-04	1,90E-04	1,74E-04	1,82E-04	1,96E-04	1,82E-04	1,91E-04	2,06E-04
Eutrophication, terrestrial	--	4,06E-04	4,33E-04	4,81E-04	4,18E-04	4,46E-04	4,96E-04	4,46E-04	4,77E-04	5,31E-04
Human toxicity, cancer	--	9,68E-05	1,01E-04	1,08E-04	9,97E-05	1,04E-04	1,11E-04	1,04E-04	1,08E-04	1,16E-04
Human toxicity, non-cancer	--	6,18E-05	6,37E-05	6,72E-05	6,30E-05	6,50E-05	6,86E-05	6,49E-05	6,70E-05	7,09E-05
Ionising radiation	--	8,11E-06	8,32E-06	8,70E-06	8,26E-06	8,48E-06	8,86E-06	8,44E-06	8,66E-06	9,07E-06
Land use	--	3,00E-05	3,09E-05	3,27E-05	3,04E-05	3,14E-05	3,32E-05	3,14E-05	3,25E-05	3,44E-05
Ozone depletion	--	9,30E-07	9,59E-07	1,01E-06	9,37E-07	9,65E-07	1,02E-06	9,51E-07	9,80E-07	1,03E-06
Photochemical ozone formation	--	6,70E-05	6,92E-05	7,34E-05	6,86E-05	7,10E-05	7,52E-05	7,09E-05	7,34E-05	7,80E-05
Resource use, fossils	--	1,58E-04	1,62E-04	1,70E-04	1,63E-04	1,67E-04	1,75E-04	1,68E-04	1,72E-04	1,81E-04
Resource use, minerals and metals	--	6,22E-05	6,36E-05	6,61E-05	6,36E-05	6,50E-05	6,75E-05	6,51E-05	6,66E-05	6,94E-05
Water use	--	7,98E-05	8,31E-05	8,89E-05	8,18E-05	8,52E-05	9,13E-05	8,52E-05	8,89E-05	9,55E-05

Annex 3 – Weighted PEF Results

JACKETS – WEIGHTED RESULTS (highlighted relevant categories >80%)											
Impact indicators		Jacket Solid Class 1	Jacket Solid Class 2	Jacket Solid Class 3	Jacket Striped Class 1	Jacket Striped Class 2	Jacket Striped Class 3	Jacket Check Class 1	Jacket Check Class 2	Jacket Check Class 3	Relevant
Acidification	mpt	1,10E-02	1,16E-02	1,24E-02	1,16E-02	1,23E-02	1,32E-02	1,24E-02	1,31E-02	1,41E-02	X
Climate change	mpt	2,00E-02	2,07E-02	2,17E-02	2,09E-02	2,17E-02	2,28E-02	2,19E-02	2,28E-02	2,40E-02	X
Ecotoxicity, freshwater	mpt	1,46E-03	1,51E-03	1,58E-03	1,52E-03	1,57E-03	1,65E-03	1,59E-03	1,65E-03	1,74E-03	
Particulate matter	mpt	1,17E-02	1,23E-02	1,31E-02	1,23E-02	1,29E-02	1,38E-02	1,31E-02	1,37E-02	1,47E-02	X
Eutrophication, marine	mpt	2,99E-03	3,13E-03	3,32E-03	3,14E-03	3,28E-03	3,50E-03	3,32E-03	3,48E-03	3,71E-03	
Eutrophication, freshwater	mpt	2,78E-03	2,87E-03	3,02E-03	2,90E-03	3,01E-03	3,17E-03	3,04E-03	3,16E-03	3,33E-03	
Eutrophication, terrestrial	mpt	8,44E-03	8,91E-03	9,60E-03	8,95E-03	9,46E-03	1,02E-02	9,59E-03	1,02E-02	1,10E-02	X
Human toxicity, cancer	mpt	1,21E-03	1,25E-03	1,30E-03	1,27E-03	1,31E-03	1,37E-03	1,32E-03	1,37E-03	1,43E-03	
Human toxicity, non-cancer	mpt	5,62E-04	5,78E-04	6,01E-04	5,84E-04	6,01E-04	6,27E-04	6,04E-04	6,23E-04	6,50E-04	
Ionising radiation	mpt	2,16E-04	2,20E-04	2,26E-04	2,23E-04	2,28E-04	2,34E-04	2,28E-04	2,32E-04	2,39E-04	
Land use	mpt	1,64E-03	1,68E-03	1,73E-03	1,68E-03	1,72E-03	1,78E-03	1,73E-03	1,77E-03	1,83E-03	
Ozone depletion	mpt	2,41E-05	2,47E-05	2,55E-05	2,46E-05	2,52E-05	2,61E-05	2,50E-05	2,57E-05	2,66E-05	
Photochemical ozone formation	mpt	1,87E-03	1,92E-03	2,00E-03	1,95E-03	2,00E-03	2,08E-03	2,01E-03	2,07E-03	2,16E-03	
Resource use, fossils	mpt	7,92E-03	8,09E-03	8,33E-03	8,24E-03	8,41E-03	8,67E-03	8,49E-03	8,68E-03	8,96E-03	X
Resource use, minerals and metals	mpt	1,74E-03	1,79E-03	1,86E-03	1,83E-03	1,88E-03	1,96E-03	1,89E-03	1,95E-03	2,03E-03	
Water use	mpt	3,56E-03	3,69E-03	3,88E-03	3,72E-03	3,86E-03	4,06E-03	3,91E-03	4,06E-03	4,28E-03	X
Single Score	mpt	7,71E-02	8,02E-02	8,47E-02	8,09E-02	8,42E-02	8,91E-02	8,52E-02	8,88E-02	9,42E-02	

Annex 3 – Weighted PEF Results

SUI TS – WEIGHTED RESULTS (highlighted relevant categories >80%)											
Impact indicators		Suit Solid Class 1	Suit Solid Class 2	Suit Solid Class 3	Suit Striped Class 1	Suit Striped Class 2	Suit Striped Class 3	Suit Check Class 1	Suit Check Class 2	Suit Check Class 3	Relevant
Acidification	mpt	1,95E-02	2,08E-02	2,29E-02	2,01E-02	2,14E-02	2,36E-02	2,14E-02	2,28E-02	2,52E-02	X
Climate change	mpt	3,42E-02	3,57E-02	3,85E-02	3,52E-02	3,68E-02	3,97E-02	3,68E-02	3,86E-02	4,17E-02	X
Ecotoxicity, freshwater	mpt	3,26E-03	3,37E-03	3,57E-03	3,31E-03	3,43E-03	3,64E-03	3,43E-03	3,55E-03	3,78E-03	
Particulate matter	mpt	2,13E-02	2,25E-02	2,46E-02	2,19E-02	2,31E-02	2,53E-02	2,31E-02	2,44E-02	2,68E-02	X
Eutrophication, marine	mpt	5,20E-03	5,49E-03	6,00E-03	5,33E-03	5,63E-03	6,16E-03	5,63E-03	5,95E-03	6,53E-03	
Eutrophication, freshwater	mpt	4,75E-03	4,96E-03	5,33E-03	4,87E-03	5,09E-03	5,48E-03	5,10E-03	5,34E-03	5,76E-03	
Eutrophication, terrestrial	mpt	1,51E-02	1,61E-02	1,78E-02	1,55E-02	1,65E-02	1,84E-02	1,66E-02	1,77E-02	1,97E-02	X
Human toxicity, cancer	mpt	2,06E-03	2,15E-03	2,30E-03	2,12E-03	2,21E-03	2,37E-03	2,21E-03	2,30E-03	2,47E-03	
Human toxicity, non-cancer	mpt	1,14E-03	1,17E-03	1,24E-03	1,16E-03	1,20E-03	1,26E-03	1,19E-03	1,23E-03	1,30E-03	
Ionising radiation	mpt	4,06E-04	4,17E-04	4,36E-04	4,14E-04	4,25E-04	4,44E-04	4,23E-04	4,34E-04	4,54E-04	
Land use	mpt	2,38E-03	2,46E-03	2,59E-03	2,41E-03	2,49E-03	2,63E-03	2,49E-03	2,58E-03	2,73E-03	
Ozone depletion	mpt	5,87E-05	6,05E-05	6,37E-05	5,91E-05	6,09E-05	6,42E-05	6,00E-05	6,19E-05	6,52E-05	
Photochemical ozone formation	mpt	3,20E-03	3,31E-03	3,51E-03	3,28E-03	3,39E-03	3,60E-03	3,39E-03	3,51E-03	3,73E-03	
Resource use, fossils	mpt	1,32E-02	1,35E-02	1,42E-02	1,36E-02	1,39E-02	1,46E-02	1,39E-02	1,43E-02	1,51E-02	X
Resource use, minerals and metals	mpt	4,70E-03	4,80E-03	4,99E-03	4,80E-03	4,90E-03	5,10E-03	4,91E-03	5,03E-03	5,24E-03	
Water use	mpt	6,79E-03	7,07E-03	7,57E-03	6,96E-03	7,25E-03	7,77E-03	7,25E-03	7,57E-03	8,13E-03	X
Single Score	mpt	1,37E-01	1,44E-01	1,56E-01	1,41E-01	1,48E-01	1,60E-01	1,48E-01	1,55E-01	1,69E-01	

Further Limitations to the Study

In accordance with the draft *PEFCR Apparel and Footwear v 2.1*, the following limitations are listed:

- Because the PEF methodology is product- and not user- centric, these PEFCRs do not allow for differentiation between the impact of a new or second-hand item.
- Transport allocation for raw materials and products is mass-based. This may underestimate the environmental impacts of transporting low-density products that have a high volume relative to their mass. To assess this, additional data is needed on the product's volume and weight. This topic will be explored further in a future version of the PEFCR.
- Although the origin of raw materials is acknowledged as having a significant impact on the garment's environmental footprint, identifying their precise source is often a complex task. Even in cases where national origin is clearly established, differences in the impact of available datasets may not accurately reflect the actual dynamics of sourcing decisions. National-level datasets do not provide a complete differentiation between providers who follow best practices and those who do not, leading to misinterpreted results based on country rather than on improvement mechanisms. Furthermore, environmental performance may be masked by market differences across national-level data sets where economic allocation is applied. Finally, given the interchangeable nature of raw materials, the decision to source from a geographical location with a lower environmental footprint does not result in a lower footprint; it simply shifts the burden to another product that is not required to measure or report its footprint, giving a false sense of improvement.
- The duration of service of items is included in the evaluation, but the methodology to measure the duration of service is highly debated and may be refined in the future. Non-physical durability attributes such as design (use of adjustable design features such as adjustable waist, enabling detaching and replacing parts such as pockets), or making the garment fit for different purposes, which may have an impact on how long a single user will use a product, were not included in these PEFCRs. However, investigations are currently looking into how to include it in a future version.
- The toxicity aspects are measured with the LCIA method USEtox, which includes human toxicity (cancer and non-cancer effects) and freshwater ecotoxicity, but currently no marine water or terrestrial ecotoxicity.
This method therefore does not cover the full impacts of chemicals on humans and ecosystems, which are covered by chemical legislation and other methodologies in Europe.
- The repair costs for the evaluation of the reparability parameter are based on repairs carried out in France and are not representative on a European scale. It is recommended to update the data as soon as more recent and representative information on country-specific repair costs becomes available to ensure that the data remain aligned with current market price developments.
- Recycling routes, in particular textile-to-textile or footwear-to-footwear, are expected to develop rapidly in the coming years. Thus, it will be crucial to further refine the current draft in relation to the verifiable evidence needed for the application of an R2>0 factor.
- The evaluation of microfibre release is preliminarily excluded from the PEF calculation.
- For cut-offs of 1%, infrastructure and capital goods were excluded. Activities such as personnel commuting, canteens at production sites, consumer goods not strictly related to production processes, marketing, business travel were excluded, in accordance with §A.2.4 of Annex II to Commission Recommendation (EU) 2021/2279. Some processes are to be excluded as required by PEFCR, as reported in the following table divided by Life Cycle Stage. PEFCR stipulates that hangers are typically given as gifts to consumers (expert judgement) and are therefore considered investment goods and should be excluded from the study. Conservatively, this assumption was not applied in the present study, thereby including the weight of the hanger in the calculation.

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