



MANTECO®

# **Sustainability Report 2023**

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Dear Stakeholders,

2023 was a year full of personal and professional satisfaction. We celebrated the 80th anniversary since the founding of the company; both I but especially my sons Marco and Matteo consider this celebration not an arrival point, but also a starting point for the company's activities.

Manteco is a 'company born doing circular economy, whose use of circular raw materials, after being carefully measured, receives recognition through the trust that customers give us every year, but also through "The Climate Action Award" received by Camera Nazionale della Moda Italiana.

It was a strong emotion to see Marco and Matteo receive the award on the stage of Teatro alla Scala, an unforgettable evening, the result of eighty years of work by the Mantellassi family, and all the collaborators who have worked together with us.

The year 2023 basically confirms the economic performance of the previous year; by now market fluctuations have become a constant due to social, political and economic tensions that are happening on a planetary level, but we cannot lose confidence for the future, to this end, in December the important acquisition of the Casentino Lane spinning mill was made. This was an important economic investment for the company, with the understanding that through this acquisition, the company will be able to both increase production capacity and be more flexible in innovations.

In addition to the usual and important stylistic research effort that the company makes every year, and our productivity based on our peculiar industrialized craftsmanship, in 2023 the company consolidated its strength in calculating and sharing the environmental impacts, both of the raw materials used and the fabrics produced. The company, both as a principle but also in accordance with current and future legislation, will never communicate unverifiable information.

I want to close this letter with a date: November 2. Day on which our area, due to extreme rainfall, flooded. Our plant suffered significant damage in the face of that weather event. While the concern about what had happened was tangible, at the same time it was heartwarming to see the employees' attachment to the company and their work, who began cleaning up the company the next morning so that it could be quickly restarted.

Despite the inconveniences and worries, these were good moments of unity, deepening company relations, and making us even more aware of our responsibilities.

Franco Mantellassi



# Brand Identity & Values

Made in Italy, quality, creativity, science-based innovation and circular economy

Manteco® is an Italian, leading company for premium quality textiles and wool circular economy since 1943. It was first established in 1941 as a small spinning mill by Enzo Anacleto Mantellassi, who started the production of recycled wool yarns, obtained by regenerating old military wool clothes and blankets. Over the decades, the company has maintained the same, circular DNA and has become a point of reference in the fashion world, thanks to a high level of creativity, research, constant investments, innovative textile solutions and a scientific approach to sustainability. Today it is still a family-run business and produces 100% in Tuscany, in a specialized, zero-mile, fully traced, transparent and certified supply chain called MSystem: a network of more than 56 partner textile companies that follow the Charter of Supply Chain Commitments drawn up by Manteco® and the highest production standards. Manteco® has its sustainability roadmap MantEco for Planet® and is particularly committed to circular fashion and avoiding value leakages along the supply chain; for this reason it has developed numerous projects: a Zero-Waste system to recover all wool industrial waste from production processes, a Sustainable Design philosophy to create durable and recyclable wool textiles, Project43 and Project53 to recycle wool fabrics' offcuts produced during the garment-making phase, and unsold or second choice wool garments.



But that’s not it, Manteco® has also created its own brands of sustainable wool. M Wool®, the next generation of recycled wool, made by mechanically recycling pre- and post-consumer wool garments and scraps, and colored without added dyes and chemicals through the Recype® technique. Compared to generic virgin wool fibers, M Wool® impacts 99.2% less on climate change, 99.9% less on water use and 93.3% less on total energy consumption. ReviWool®, the low-impact virgin wool, made of valuable co-product fibers coming from the worsting process of virgin wool, which instead of being wasted, are re-covered and masterfully turned into premium quality textiles - promoting value capture and enhancing wool production cycles’ efficiency. Compared to generic virgin wool tops, ReviWool® impacts 65.6% less on climate change, 65.5% less on water use and 65.6% less on total energy consumption.

All of those commitments and initiatives on circular economy has led the company to become a Member of the Ellen MacArthur Foundation’s Network and a partner of the Monitor for Circular Fashion by SDA Bocconi.

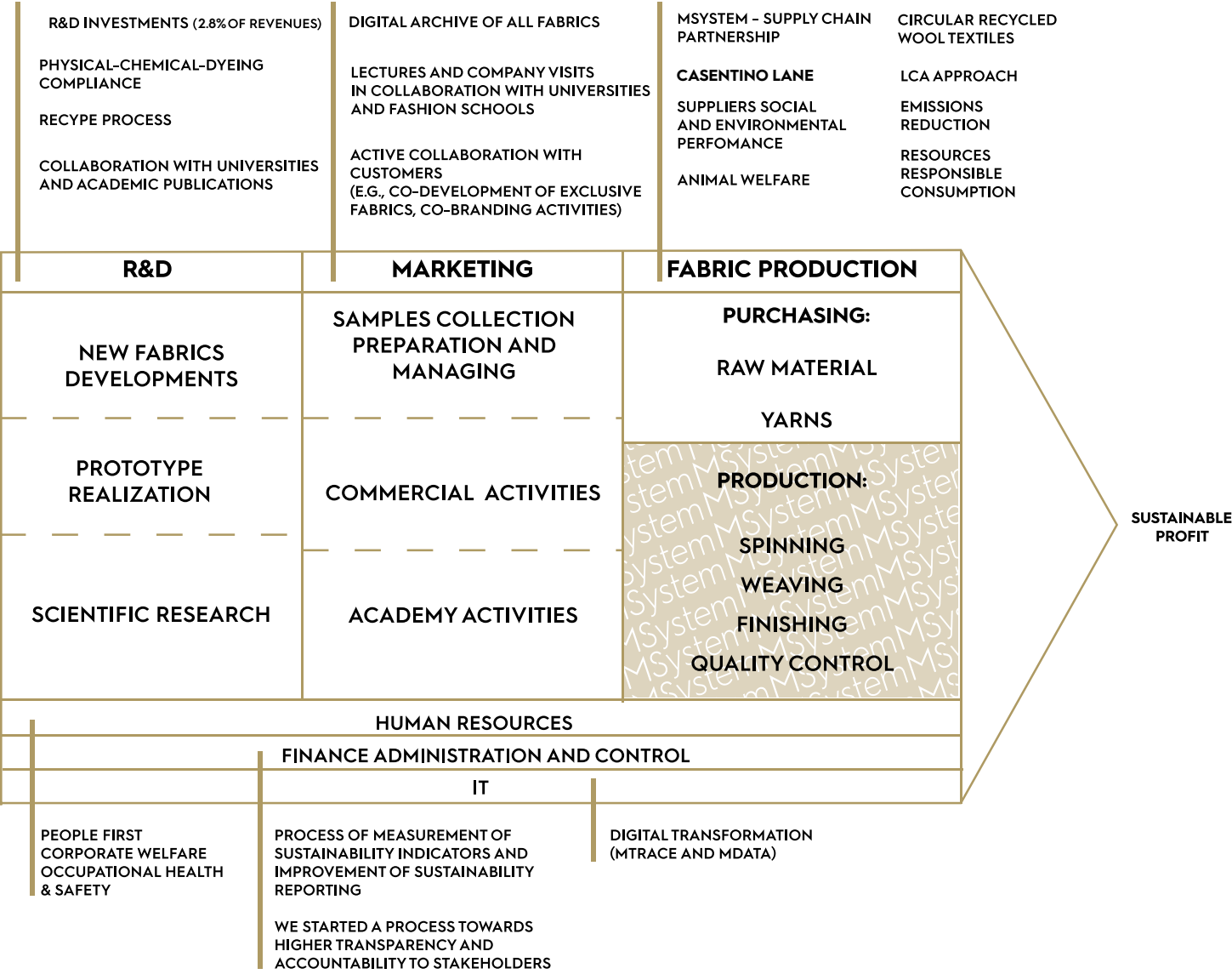
Manteco® was the first-ever textile company to apply a Life Cycle Assessment on recycled and recovered wool fibers, later also published as a scientific article on MDPI Resources and Journal of Cleaner Production.

Manteco® is also strongly engaged in the field of education with the Manteco Academy project, through which we partner with the world’s best fashion schools by giving lectures about circular fashion, arranging eco-design contests and donate deadstock fabrics to students for their final projects. Manteco Academy has recently been accepted among the UNECE’s Sustainability Pledge submissions.

The values of sustainability and adherence to the principles of the UN 2030 Agenda for Sustainable Development are increasingly an integral part of our own way of doing business and are placed at the center of operational, management and relationship practices. In order to strengthen the dissemination of these principles and make them cornerstones, Manteco prepared and issued a Charter of Values for Sustainability in 2015, based on 6 pillars:

1. POLICIES AND GOALS
2. TRACEABILITY AND SUSTAINABLE SUPPLY CHAIN
3. DESIGN AND CHOICE OF SUSTAINABLE MATERIALS
4. CHEMICAL RISK CONTAINMENT AND MONITORING
5. CLIMATE COMMITMENT
6. PEOPLE FIRST

# Manteco Business Model

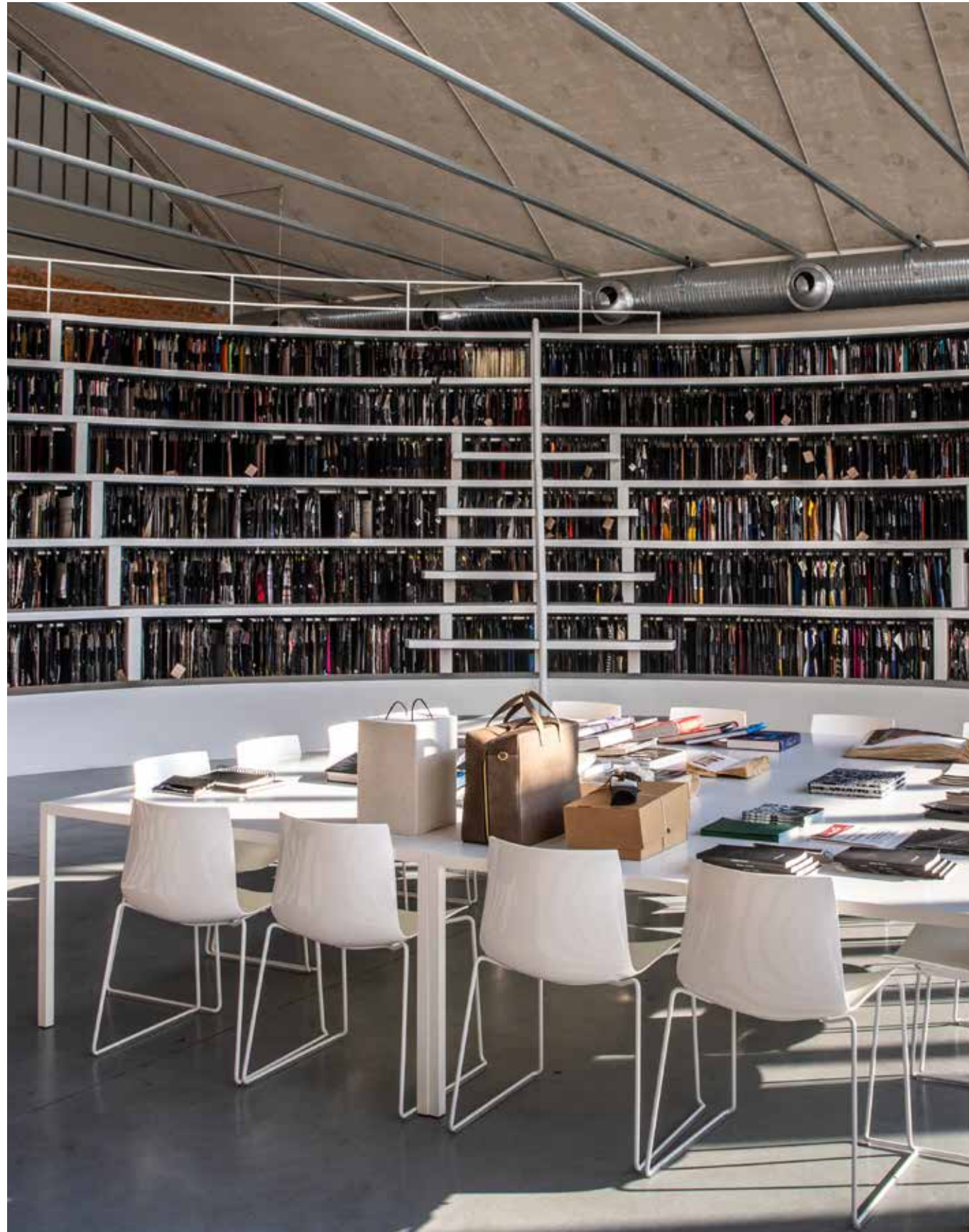








# Company's technical description



The legal form of the organization is a joint stock company, which is wholly owned by Ing. Franco Mantellassi Holding S.r.l. (IFMH S.r.l.). The organization is headquartered in Italy.

The address of the company's headquarters is Montemurlo (PO) - Via della Viaccia, 18. Company activities are carried out at three locations in Montemurlo (PO):

- Via della Viaccia 19: Headquarters of management, creative and fabric control laboratories as well as raw fabric control and finished product shipping departments
- Via della Viaccia 3: Headquarters of the warehouse for raw fabric control and sorting
- Via dei Mille 10: Location of the yarn and raw materials warehouse.

The plants described are located in the industrial area of Prato's textile district.

## The main processes carried out by the organization are:

- Design and development of textiles
- Commercial activity
- Management of external production activities, with particular reference to the management of raw textiles manufacturing and finishing
- The quality control of textile production
- Product packaging and logistics
- Accounting administration and finance
- Human resources management







# Timeline: history of Manteco

- 1941** ● Enzo Anacleto Mantellassi acquires a spinning mill destroyed by the war and starts producing recycled wool yarns by mechanically regenerating military wool blankets, garments and accessories.
- 1943** ● Enzo Anacleto Mantellassi acquires the first looms and founds Lanificio San Marco, beginning the production of carded recycled wool fabrics for clothing.
- 1945** ● Lanificio San Marco joins Confindustria and begins to grow in northern European markets.
- 1952** ● The post-war economic boom. Lanificio San Marco grows a lot and starts building a new, ultra-modern factory, designed by "Il Patio" Studio, one of the most advanced industrial architecture studio of the time, run by architect Ghelli and Professor Zetti.
- 1967** ● Enzo Anacleto Mantellassi dies unexpectedly and Franco Mantellassi takes over his father's company.
- 1971** ● Franco Mantellassi renames the company to Lanificio Franco Mantellassi and begin to innovate, enhancing regenerated wool colors as never before and experimenting with new Spring/Summer collections, using cotton, linen, silk and viscose. It was the time of the blossoming of international fairs in Frankfurt, Paris, Hong Kong, New York, Moscow, Tokyo, and our own "Prato Espone", of which Franco was one of the founders.
- 1983** ● The company changes its name to Mantellassi Compagnia Tessile (Manteco) and begins to focus heavily on internationalization, opening - in parallel with its network of agents - sales offices in Hong Kong, Shanghai and Los Angeles, and operating a geographic market differentiation.
- 1988** ● Manteco concretely demonstrates its love for art and culture by participating in the founding of the Luigi Pecci Center for Contemporary Art.
- 2000** ● Matteo and Marco Mantellassi, after their respective degrees, join their father Franco at the helm of the company, bringing their skills, energy and - above all - their forward-looking approach. In the same year, the New York office was opened, an essential step in order to maintain a proximity to a major market.
- 2008** ● Manteco creates BiBye®, its iconic, high-end, durable and recyclable carded virgin wool double fabric hat becomes an excellence in the fashion world and mark the definitive turning point for the company's growth.



2009

Manteco becomes increasingly important and begins to focus on spreading its brand. To do so, the company's historical trademark is restyled, modernized and applied to woven labels, which begin to pop up on customers' garments as a guarantee of added quality to their product. Manteco® creates BiBye® MW, its iconic, high-end, durable and recyclable carded recycled wool double fabric.

2010

Manteco inaugurates the current complex - created by recovering and renovating old industrial warehouses - with offices, showrooms, but also the CIRCULAR ECONOMY LAB: an innovative and hi-tech spot in the raw material department, with extremely modern laboratories for studies on recycled wool fibers, yarns and textiles. All of this leads to a huge collection of data that will prove essential for the company's development and improvement.

2014

Manteco begins a self-assessment path, studying its production processes to understand where it was still possible to limit the consumption of important resources such as water, to reduce the use of chemical processes and cut down the emission of CO<sub>2</sub>. It was discovered that more than 15% of wool was lost in different production steps, from the raw material to the final fabric. Hence, the Zero-Waste project was born, through which the company recovers and reuses all the wool waste deriving from the various stages of production.

2015

Manteco purchases, restores and put solar panels on a series of abandoned warehouses. The goal was to create welcoming workplaces that would meet the highest standards for our employees and accommodate the new needs of a booming company. Manteco creates the MantEco for Planet® roadmap to sustainability, aligned with the United Nations' SDGs. The MantEco for Planet® roadmap is also awarded with the Radical Green Prize.

2016

Manteco compiles and releases its first-ever Sustainability Report.

2017

Manteco starts its journey through international standards for sustainability and become the district's first textile company to obtain the Global Recycled Standard (GRS) certification for recycled wool and the Responsible Wool Standard (RWS) certification for virgin wool.

2018

To celebrate its 75th anniversary, the company inaugurates the Archivio Manteco, a unique facility that holds the company's entire history, with more than 83,000 fabrics and all the colors and patterns created by the company over the decades. In the same year, the Manteco Academy project is also created, through which the company supports numerous fashion schools and young designers, organizes contests and field trips, and does specialized lectures on circular fashion, both online and in-person. Manteco creates the MWool® brand, the next generation of recycled wool and the Recype® color creation technique.

2019

Manteco obtains the Organic Content Standard (OCS) certification and creates Project43, an innovative and traceable circular economy project, with which the company offers its customers the opportunity to recover and regenerate manufacturing offcuts to create new recycled wool fabrics and close the loop. The importance of this project is also reiterated by the European Commissioner Elzbieta Bienkowska, who visits the company and defines it as a great example of circular economy and sustainability. Manteco also adheres to the Better Cotton Initiative BCI and creates the MSystem, its supply chain network of selected partners that work by respecting a special Charter of Supply Chain Commitments.

2020

Manteco becomes the first company in the world to apply a Life Cycle Assessment on a recycled wool fabric, moving toward an increasingly scientific approach to sustainability, circular economy and communication. Manteco also creates Project53, another traceable project to recycle wool fabrics' offcuts produced during the garment-making phase, and unsold or second choice wool garments.

2021

Manteco becomes a Member of the Ellen MacArthur Foundation Network, a leading international foundation that develops and promotes the circular economy, and becomes a partner of the Monitor for Circular Fashion by SDA Bocconi, a multi-stakeholder project involving leading fashion companies and supply chain actors with scientific input from the SDA Bocconi Sustainability Lab and Enel X's cross-industry vision to identify circularity KPIs. Manteco also obtains the European Flax® certification and creates Pure®, the next generation of circular and luxury outerwear fabrics made of 100% MWool®.

2022

Manteco carries out an unprecedented, in-depth LCA study on its MWool® fibers, in collaboration with the prestigious Polytechnic of Turin. This study is approved by the scientific community and published as a scientific article on MDPI Resources, and it is also certified through the EPD® (Environmental Product Declaration) scheme. Manteco adheres to the ZDHC Supplier to Zero Initiative foundation Level which certifies the application of the MRSL ZDHC at Foundational level. Manteco creates VITA, the most durable recycled wool fabric. MWool® is included among the Preferred Fibres in the Higg MSI platform. Manteco carries out a scientific study on the Marine Biodegradability and Ecotoxicity of MWool® fibers and publishes it as a scientific article on MDPI Oceans. Manteco finds a way to reduce the impact of its virgin wool fabric by creating ReviWool®, the low impact virgin wool, and carrying out another unprecedented Life Cycle Assessment on virgin wool fibers.

2023

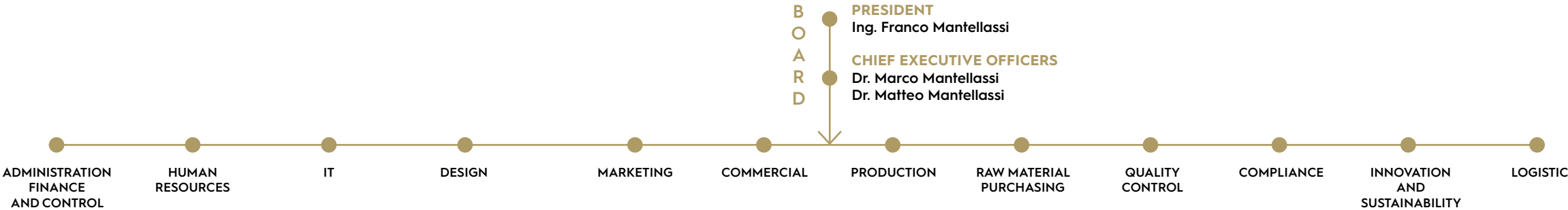
Manteco acquires the Casentino Lane spinning facility, an important production plant located in the Casentino area, a UNESCO World Heritage site and a unique biodiversity hotspot, home to textile art since the 1300s. Moreover, the LCA of ReviWool® is peer-reviewed and published in the prestigious Journal of Cleaner Production; Manteco® also obtains the EPD® certification on four collections: ReviWool® blend fabrics, MWool® blend fabrics, Pure MWool® fabrics and Woolten® fabrics confirming the company's commitment to accounting for the environmental impacts of production.







# Governance



As determined by the ordinary Shareholders' meeting, the administration of the company is entrusted to a Board of Directors that is vested with decision-making powers for ordinary and extraordinary administration, concerning all actions necessary for achieving corporate purpose. Currently, the members appointed by the Shareholders' meeting are Franco Mantellassi as Chairman, and Matteo and Marco Mantellassi as Directors which serve for a period established by the Shareholders' meeting, up to the approval of the Financial Statements for the last fiscal year of their term. The role of Commercial Director is delegated to Director Marco Mantellassi, while the role of Administrative Control is delegated to Director Matteo Mantellassi.

The Board evaluation is conducted based on the company's performance, considering that it is actively involved in its management. As reported in its Bylaw, Manteco's net profit is distributed among the shareholders in accordance with the privileges and in proportion to their respective shares, after deducting the percentage for the legal reserve.

## HELP THE TRANSITION TO A MORE RESPONSIBLE AND CIRCULAR FASHION SYSTEM

In addition to the Board of Directors, there is a Board of Statutory Auditors, composed of three standing auditors and two alternate auditors, which is responsible for overseeing on accounting/administrative matters as required by law. Specifically, it ensures compliance with the company's bylaws, adherence to proper administration principles, the adequacy and effective functioning of the company's organizational, administrative, and accounting structures.

Manteco deemed it necessary to establish a series of ethical principles and behavioral rules to guide its activities, promote strong ethical integrity and foster a corporate culture sensitive to compliance. In this context, Manteco started the process in the financial year 2023, which led to the preparation and formalization of the Whistleblowing procedure in the financial year 2024. In particular, the Whistleblowing procedure encourages staff to report events or situations where potential or apparent illegal or fraudulent activities are encountered during work. In particular, such situations include violations of laws and regulations, corruption or extortion, public health and safety hazards, environmental damage, false corporate communications, illegal financial operations, and, in general, risks and dangerous situations that may harm clients, colleagues, citizens, property, or the company's reputation. To address this issue, a dedicated procedure has been set up, allowing for anonymous and secure reporting. The procedure ensures complete confidentiality and guarantees that reported events will be handled with the utmost discretion and professionalism, in compliance with current privacy laws. The procedure was given the widest possible dissemination through its publication on Manteco's website.

On this matter, it is certified that Manteco, up to the date of preparation of this statement, has not received communications or notifications on issues related to the aforementioned matters from the Board of Statutory Auditors and from qualified public creditors or banks and financial intermediaries.



*\*The Board is composed of 3 non-executive men, two over 50 years old and one between 30 and 50 years old. In addition, the Chairman is not a senior executive of the organization.*



Given its nature as a family-owned business, Manteco has adopted simplified governance policies. However, this approach does not overlook the definition of strategic aspects, the monitoring of decision-making processes, and the examination of operational activity guidelines.

The President and Board communicate guidelines and goals for sustainability to the entire organization, while Directors engage in constant dialogue with the internal function responsible for sustainability-related initiatives and periodically participate in workshops on sustainable development issues. In addition, continuous discussions between the Board of Directors and the Innovation and Sustainability Department ensures that commercial strategies remain aligned with sustainability priorities over the time.

These meetings allow to explore the opportunities related to sustainability reporting, industry trends and regulatory developments that could influence the company's strategic and operational choices.

To raise awareness among employees about the importance of study and research activities for innovation, particularly concerning sustainability, Manteco provides bonuses upon hiring or during contract reviews for employees in these technical areas.

In the first months of 2024, Manteco has defined an internal Reporting Procedure for the drafting of the Sustainability Report, to determine the organizational structures involved, the methods used for collecting, processing and controlling the non-financial data reported in this document. The purpose of the new reporting procedure is also to standardize the data collection and approval process of Manteco's Sustainability Report, to avoid conflict of interests.

Through this Procedure, the responsible figures in the process are identified, including the main involved function (Innovation and Sustainability), which is responsible for coordinating the reporting process, starting from the materiality analysis.

The Head of Innovation and Sustainability collaborates with the various data owners to gather the necessary

PRESERVING OUR  
TERRITORY'S  
TEXTILE HERITAGE,  
ENHANCING  
TRANSPARENCY  
AND TRACEABILITY

data for drafting the report and, subsequently, handles the drafting of the document.

In addition to its usual duties, the Board of Directors validates the results of the materiality analysis and definitively approves the Sustainability Report.

The outcome of the internal Reporting Procedure will be represented by the assignment of a delegation on sustainability issues to one of the two Directors.

The latter will have the task of verifying and approving the data and texts reported in the draft of Sustainability Report, with the C-level managers.



CASENTINO LANE

- 5000m<sup>2</sup> of building
- Spinning & coning machines
  - 700'000-900'000 kgs of yarn production per year

In December 2023 Manteco has completely acquired the ownership of the historical spinning Casentino Lane srl of Bibbiena in the area of Casentino, important textile center from the Middle Ages to UNESCO World Heritage site, and a unique biodiversity hotspot.

The plant covers an area of 5000 sqm, with a production capacity of 700,000-900,000 kgs/year of yarn.

Thanks to this acquisition Manteco expects an increase in production capacity, greater flexibility in the development of new yarns through investments in new production technologies.

During 2024, Manteco's Governance procedures will be implemented also in the organizational structure of Casentino Lane.





# AWARDS 2023

## THE CLIMATE ACTION AWARD

at Sustainable Fashion Awards 2023 // Camera Nazionale della Moda



 CNMI  
SUSTAINABLE  
FASHION 2023  
AWARDS

 ELLEN MACARTHUR  
FOUNDATION  
Member

## BEST PERFORMER PRIZE

TV Moda



## TOP 100

Performance Sustainability Award 2023 // Forbes



 Sustainability  
Award Top 100  
CREDIT SUISSE

## FORUM PREIS WINNER

Textile Wirtschaft





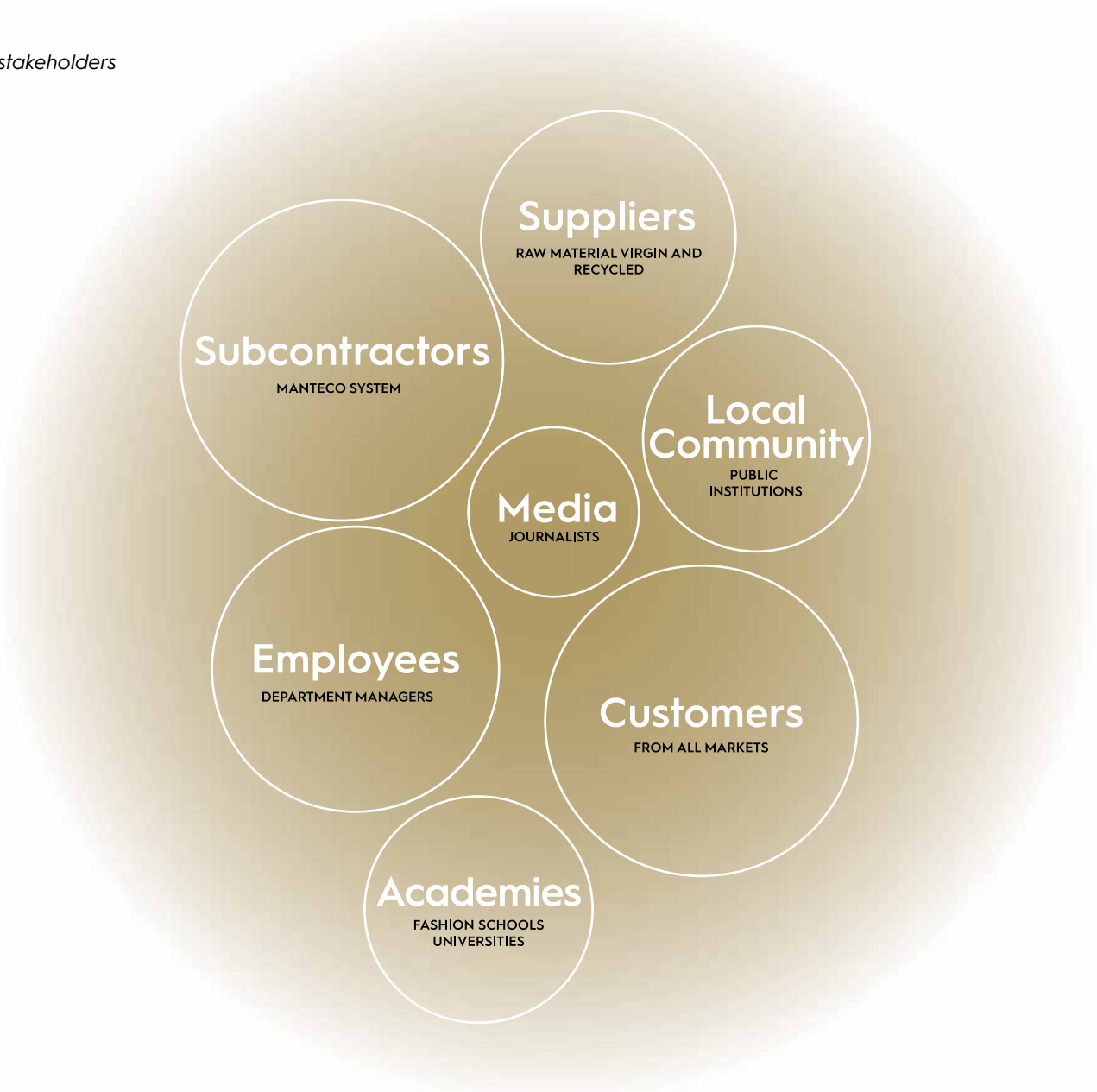
# Materiality Assessment

After an engagement activity, in order to listen more closely to our stakeholders' interests, possible needs and concerns. In line with the GRI Standards, Manteco conducts a materiality assessment in order to identify issues considered as "material" by itself, as a company, and its stakeholders.

Several tools are used to collect and organize the data. Manteco, as a first approach, uses an ad hoc survey. The company identifies issues it considers material and asks its stakeholders to express their opinion on each one of these. Using a scale, chosen as a parameter, to assign a value ranging from 1 (irrelevant) to 5 (very relevant), stakeholders can provide their views on the various issues in a timely manner. The study and organization of the survey results allow for a detailed mapping.

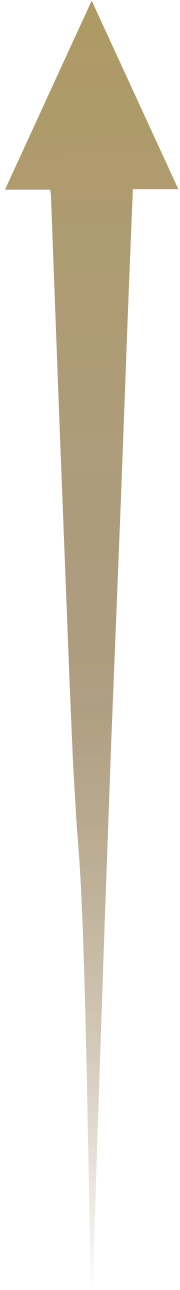
In carrying out its business, Manteco relates to various stakeholders who are directly and/or indirectly affected by the company's activities. The categories of stakeholders that Manteco addresses are listed below:

Our stakeholders





Below the 14 material themes resulting from the analysis are listed:



- CLIMATE CHANGE
- CIRCULARITY
- RAW MATERIALS
- CUSTOMER SATISFACTION
- TRACEABILITY AND TRANSPARENCY
- CHEMICAL MANAGEMENT
- LOCAL PRODUCTION
- CULTIVATION OF TALENTS
- DIGITAL TRANSFORMATION
- ANIMAL WELFARE
- SUPPORT TO THE TERRITORY
- HEALTH AND WELLNESS
- PACKAGING
- DIVERSITY AND INCLUSION





# The sustainable development goals

Manteco, through its sustainable development strategy, contributes directly or indirectly to the achievement of the Sustainable Development Goals (SDGs), defined in 2015 by the United Nations and included in the 2030 Agenda.

## Goal 3: Good health and well-being



SDG 3 is to: “Ensure healthy lives and promote well-being for all at all ages”. Important indicators here are life expectancy as well as child and maternal mortality. Further indicators are for example deaths from road traffic injuries, prevalence of current tobacco use, suicide mortality rate.

## Goal 4: Quality education



SDG 4 is to: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. The indicators for this goal are for example attendance rates at primary schools, completion rates of primary school education, participation in tertiary education and so forth.

## Goal 5: Gender equality



SDG 5 is to: “Achieve gender equality and empower all women and girls”. Indicators include for example having suitable legal frameworks and the representation by women in national parliament or in local deliberative bodies. Numbers on forced marriage and female genital mutilation/cutting (FGM/C) are also included in another indicator.

## Goal 6: Clean water and sanitation



SDG 6 is to: “Ensure availability and sustainable management of water and sanitation for all”. The Joint Monitoring Programme (JMP) of WHO and UNICEF is responsible for monitoring progress to achieve the first two targets of this goal. Important indicators for this goal are the percentages of the population that uses safely managed drinking water, and has access to safely managed sanitation.

## Goal 7: Affordable and clean energy



SDG 7 is to: “Ensure access to affordable, reliable, sustainable and modern energy for all”. One of the indicators for this goal is the percentage of population with access to electricity (progress in expanding access to electricity has been made in several countries, notably India, Bangladesh, and Kenya). Other indicators look at the renewable energy share and energy efficiency.

## Goal 8: Decent work and economic growth



SDG 8 is to: “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Important indicators for this goal include economic growth in least developed countries and the rate of real GDP per capita. Further examples are rates of youth unemployment and occupational injuries or the number of women engaged in the labor force compared to men.

## Goal 9: Industry, Innovation and Infrastructure



SDG 9 is to: “Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation”. Indicators in this goal include for example the proportion of people who are employed in manufacturing activities or who are living in areas covered by a mobile network or who have access to the internet. An indicator that is connected to climate change is “CO2 emissions per unit of value added”.

## Goal 11: Sustainable cities and communities



SDG 11 is to: “Make cities and human settlements inclusive, safe, resilient, and sustainable”. Important indicators for this goal are the number of people living in urban slums, the proportion of the urban population who has convenient access to public transport, and the extent of built-up area per person.

## Goal 12: Responsible consumption and production



SDG 12 is to: “Ensure sustainable consumption and production patterns”. One of the indicators is the number of national policy instrument to promote sustainable consumption and production patterns. Another one is global fossil fuel subsidies. An increase in domestic recycling and a reduced reliance on the global plastic waste trade are other actions that might help meet the goal.

## Goal 13: Climate action



SDG 13 is to: “Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy”. In 2021 to early 2023, the Intergovernmental Panel on Climate Change (IPCC) published its Sixth Assessment Report which assesses scientific, technical, and socio-economic information concerning climate change.

## Goal 15: Life on land



SDG 15 is to: “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. The proportion of remaining forest area, desertification and species extinction risk are example indicators of this goal.





	SDG										
	3	4	5	6	7	8	9	11	12	13	15
CLIMATE CHANGE	●				●	●			●	●	●
CIRCULARITY	●			●		●		●	●	●	●
RAW MATERIALS						●	●		●	●	
CUSTOMER SATISFACTION									●		
TRACEABILITY & TRANSPARENCY						●			●		
CHEMICAL MANAGEMENT				●					●	●	●
LOCAL PRODUCTION						●			●		
CULTIVATION OF TALENTS	●	●	●			●					
DIGITAL TRANSFORMATION							●			●	
ANIMAL WELFARE				●					●		●
SUPPORT TO THE TERRITORY						●		●			
HEALTH AND WELLNESS	●					●					
PACKAGING									●		
DIVERSITY AND INCLUSION	●		●			●					

The contribution to the achievement of the SDGs also comes from some themes not included in the material themes, as per the table below:

	3	4	5	6	7	8	9	11	12	13	15
R&D						●	●		●		
WATER CONSUMPTION				●							
CERTIFICATIONS AND INITIATIVES							●				

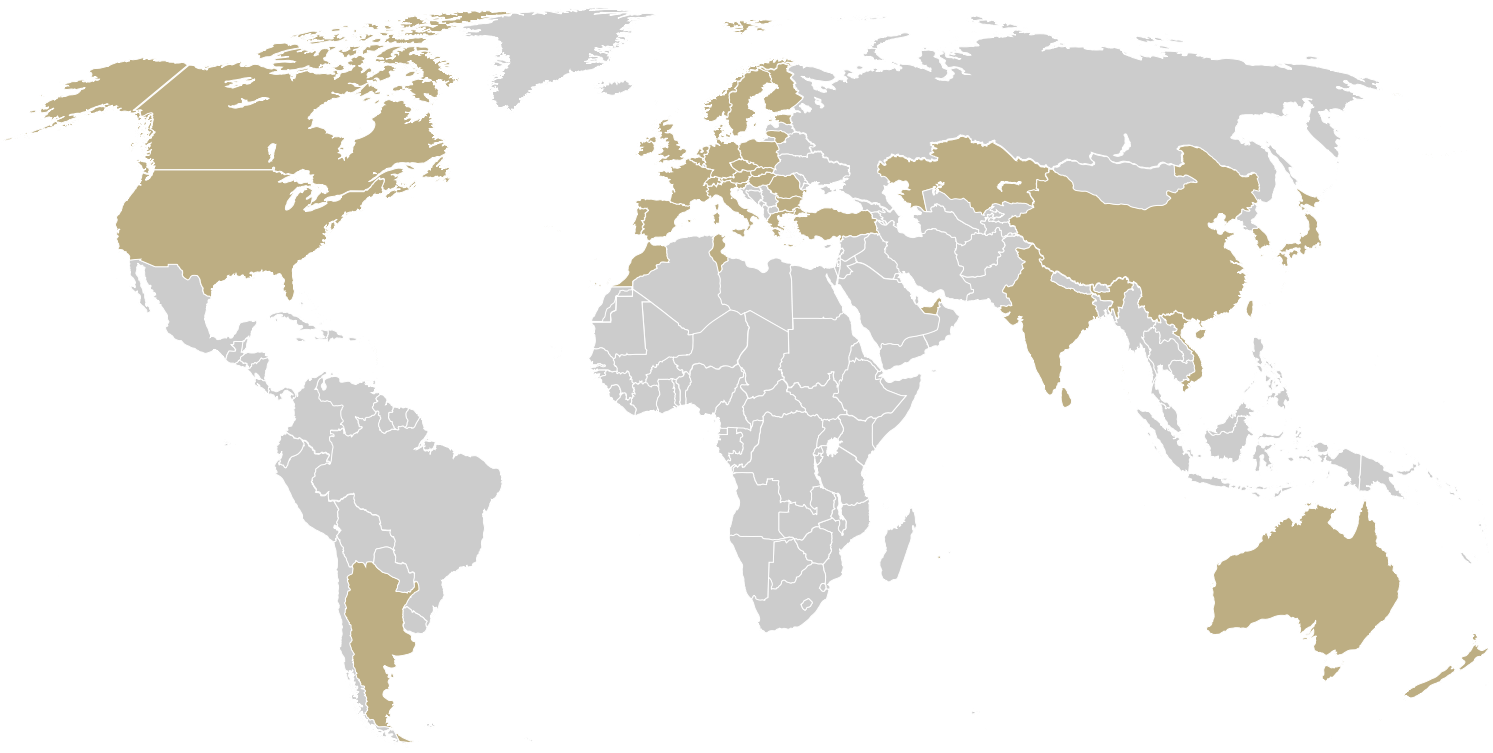


# Year in short

Manteco works mainly for fashion brands in the international arena. Specifically, the company produces fabrics used by fashion and apparel brands to make garments for men, women and children. Below is a look at the number of Manteco’s clients and their geographical locations.

Total customers			
2022		2023	
961		985	
Italy	Abroad	Italy	Abroad
199	762	201	784

Served countries	
2022	2023
45	41



Revenues (Euro)					
2022		2023		Variation %	
96,846,938		98,695,042		+1.8%	
Italy	Abroad	Italy	Abroad	Italy	Abroad
9,275,475	87,571,463	9,136,342	89,558,700	-1.5%	+2.2%

Distribution of value among stakeholders

The economic data relating to the financial year and the comparison with the previous year are shown below. The data are analyzed considering how the revenues from operations, i.e. the value of Manteco production, is redistributed to the various stakeholders to personnel through salaries; to suppliers through the purchase of goods and services useful for production, to the Public Administration through tax charges; to the community through donations, sponsorships and donations; to shareholders and to company itself through the distribution of profits, provisions and depreciation and accounting of investments. This subdivision, which takes place through the reclassification of some income statement items, illustrates the characteristics of the company’s business, and clearly directs the priorities for action to achieve its sustainability objectives.

Production Volumes

	2022	2023
Total quantity produced	7,457,039 mt.	7,359,464 mt.

Production volumes are referred to the meters sold.

Direct economic value generated and distributed (Euro)			
	2022	2023	Variation %
DIRECT ECONOMIC VALUE GENERATED	99,677,451	102,449,038	2.7%
Revenues	96,846,938	98,695,042	1.8%
ECONOMIC VALUE DISTRIBUTED	90,558,239	89,381,582	-1.3%
To suppliers	78,410,602	78,010,686	-0.5%
To employees (wages and benefits)	4,427,382	4,853,062	8.7%
To credit institutions	332,331	257,251	-2.9%
To shareholders	3,501,400	3,001,200	-16.6%
To Public Administration	3,767,246	3,125,333	-20.5%
To community	119,278	134,049	11.0%
ECONOMIC VALUE RETAINED	9,119,212	13,067,456	30.2%

In 2023, Manteco invested 2,830,852 Euro in Research & Development to develop new styles and circular economy projects (3,362,973 Euro in 2022).



## HIGHLIGHTS

# ReviWool®

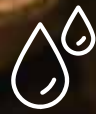
## IMPACTS



**-65,6%**  
LESS ON CO<sup>2</sup>  
EMISSIONS



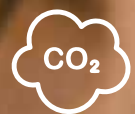
**-65,6%**  
LESS ON TOTAL  
ENERGY USAGE



**-65,5%**  
LESS ON WATER  
CONSUMPTION

# MWool®

## IMPACTS



**-99,2%**  
LESS ON CO<sup>2</sup>  
EMISSIONS



**-93,3%**  
LESS ON TOTAL  
ENERGY USAGE



**-99,9%**  
LESS ON WATER  
CONSUMPTION

# MANTECO® for ENVIRONMENT

**ReviWool®**

**MWool®**

**Recype®**

**Animal Welfare**

**Circularity**

**Certifications & initiatives**

**Responsible chemical management**

**Supply chain's physical-chemical-dyeing compliance**

**Water consumption**

**Soil & energy**

**Emissions**

**Waste**

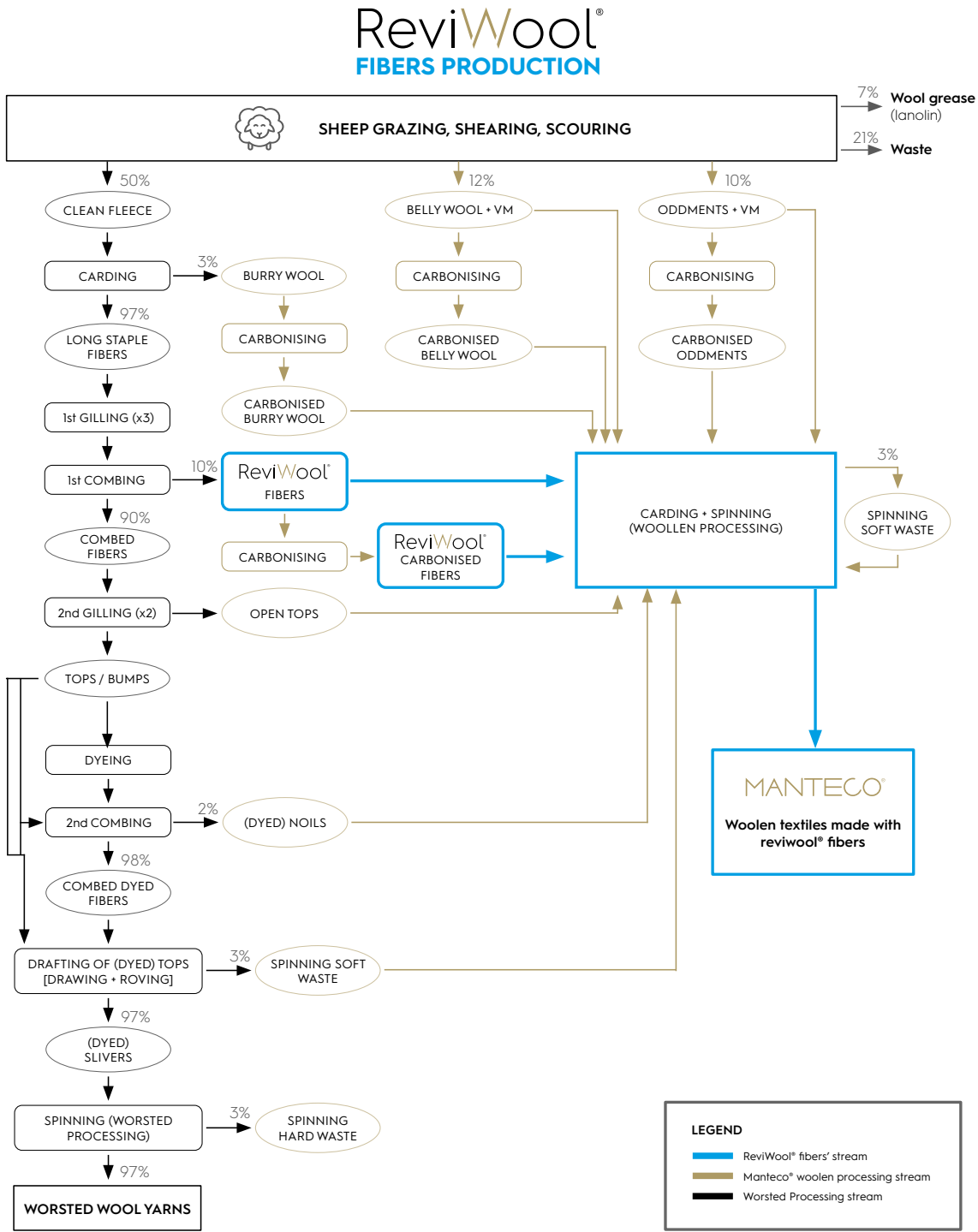
**Raw Materials**

**Packaging**



# ReviWool®

This extra-fine and recyclable virgin wool is the result of Manteco circular DNA. The value leakage in the supply chain is eliminated by enhancing production cycle's and material's efficiency. ReviWool® is made of valuable co-product fibers coming from the worsting process of virgin wool, which instead of being wasted, are recovered and masterfully processed through the woollen process to create premium quality textiles with a lower environmental impact, all guaranteed by our MSystem zero-mile and specialized supply chain.





In 2022, through a study conducted in collaboration with the Politecnico di Torino Manteco calculated the impacts of the entire wool supply chain. The full study has been published in the [Journal of Cleaner Production](#). (see pag. 89)

The study firstly provides a detailed mapping of processes and products involved in the wool production chain, from the sheep grazing to the yarn production, with particular attention to the woollen part.

Secondly, this study analyses the environmental impacts of the different intermediate products. It results that fibers, used in the woollen processing, generally have lower impacts than fibers addressed to the production of fine yarns. The study is one-of-a-kind, as not only did it manage to allocate the right impact to ReviWool®, but simultaneously managed to shed light on the impacts related to the different wool components.

ReviWool® promotes value capture and enhances wool production cycles' efficiency, but also the absence of SHVC, since the fibers are APEO's free, and animal welfare, because the suppliers have all signed the policy on respect for animals.

PROCESSED QUANTITIES	
2022	2023
1,249,947 Kg	1,722,151 Kg

By the ratio between the carbonised and non carbonised fibres below the impact of ReviWool® fibers compared to generic virgin wool open tops was as follows:

Impact category	Unit	ReviWool	Open Tops
Climate change	kg CO <sub>2</sub> eq	2.95E+01	8.57E+01
Ozone depletion	kg CFC11 eq	3.64E-07	1.04E-06
Photochemical ozone formation	kg NMVOC eq	2.57E-02	7.44E-02
Particulate matter	disease inc.	4.73E-06	1.37E-05
Acidification	mol H <sup>+</sup> eq	6.68E-01	1.94E+00
Eutrophication, freshwater	kg P eq	7.22E-03	2.09E-02
Eutrophication, terrestrial	mol N eq	2.95E+00	8.56E+00
Ecotoxicity, freshwater	CTUe	4.67E+02	1.36E+03
Land use	Pt	3.08E+03	8.95E+03
Water use	m3 depriv.	5.36E+00	1.55E+01
Resource use, fossils	MJ	4.07E+01	1.16E+02
Resource use, minerals and metals	kg Sb eq	5.33E-05	1.54E-04

\*Such fibers are virgin according to EU Regulation 1007-2011 Art. 8 Entry 1.

According to the processed quantities of ReviWool® below impacts

	2022	2023
Climate change (t CO <sub>2</sub> eq.)	36,873	50,803
Water use (hm <sup>3</sup> depriv.)	6.69	9.23
Resource use, fossils (TJ)	49.87	70.09

Below the impacts that would be achieved by processing the same quantities of open tops

	2022	2023
Climate change (t CO <sub>2</sub> eq.)	107,120	147,588
Water use (hm <sup>3</sup> depriv.)	19.37	26.69
Resource use, fossils (TJ)	144.99	199.77

Below the savings

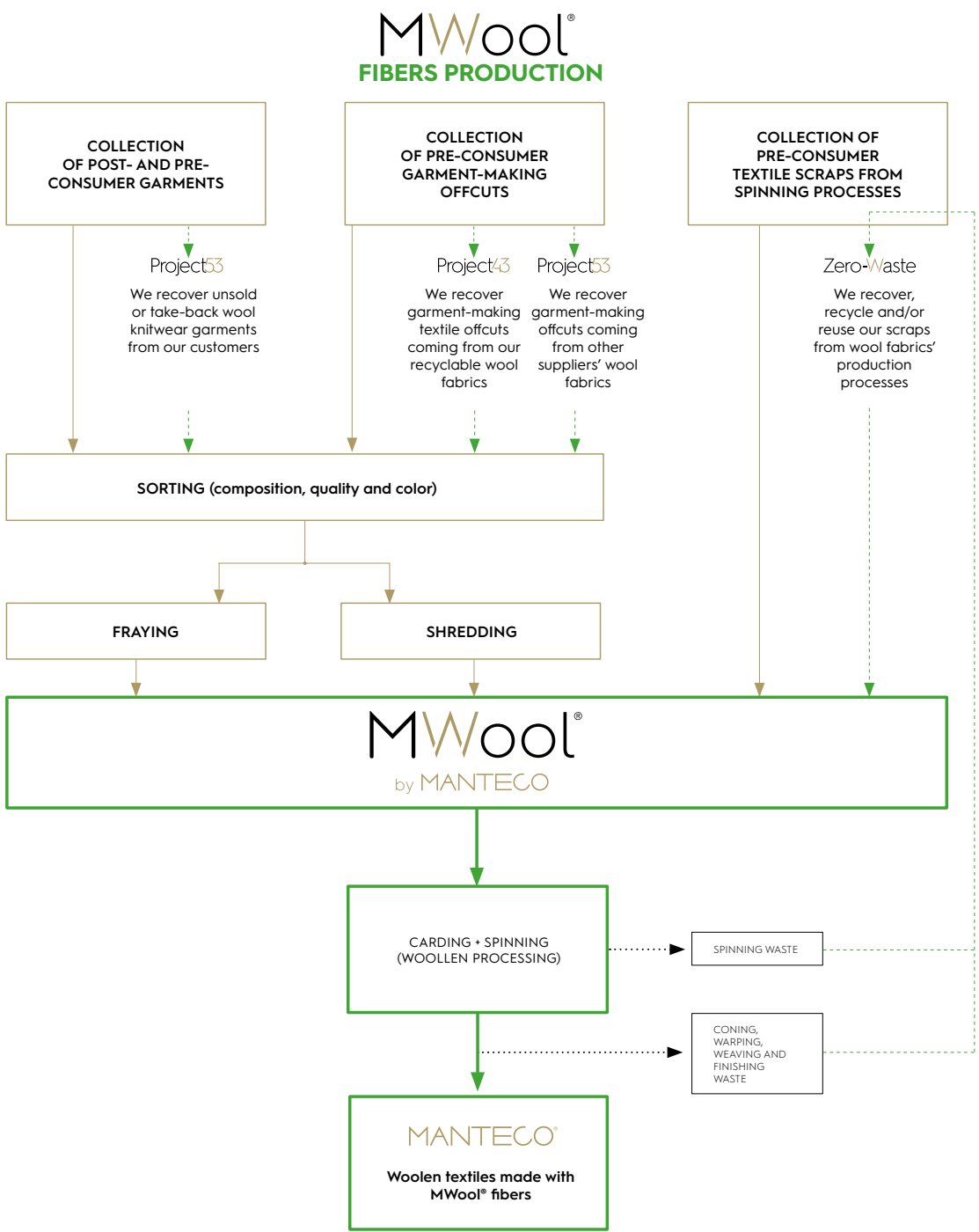
	2022	2023
Climate change (t CO <sub>2</sub> eq.)	70,247	96,785
Savings	65.6 %	65.6%
Water use (hm <sup>3</sup> depriv.)	12.68	17.45
Savings	65.5 %	65.3%
Resource use, fossils (TJ)	95.12	129.68
Savings	65.6 %	64.9%



# MWool®

MWool® is the key ingredient of our premium and circular recycled wool textiles.

This low-impact and high-end fiber is the result of more than 80 years of circular know-how, innovation and science. MWool® is a raw material that fosters an all-round circular economy, as it is made by mechanically recycling post-industrial waste, pre-consumer offcuts and leftovers, and – even most importantly – post-consumer garments.





MWool® stands out for an accurate selection and deep testing of the best possible raw materials, a low-impact mechanical recycling process, a masterful and dyes-free color creation through our Recype® process, a painstaking quality control and testing, all guaranteed by our MSystem zero-mile and highly specialized supply chain.

Thanks to a collaboration with the Politecnico di Torino, MWool® became the first-ever recycled wool with a Life Cycle Assessment that was approved by scientific community ([MDPI Resources](#)). As a result of the study, two certification activities were carried out:

Based on the study, and as a result of the type and source of raw material purchased, the impact of 1Kg of processed MWool® fibers, in 2023, is listed below in comparison to 1 kg of generic virgin wool.

PROCESSED QUANTITIES		
2021	2022	2023
1,125,460 Kg	1,575,862 Kg	1,301,009 Kg

Impact category	Unit	MWool	Generic Virgin wool
Climate change	kg CO <sub>2</sub> eq	2.68E-01	7.58E+01
Ozone depletion	kg CFC11 eq	5.08E-08	1.17E-06
Photochemical ozone formation	kg NMVOC eq	2.84E-03	7.31E-02
Particulate matter	disease inc.	1.74E-08	1.19E-05
Acidification	mol H <sup>+</sup> eq	3.60E-03	1.69E+00
Eutrophication, freshwater	kg P eq	2.33E-05	1.83E-02
Eutrophication, terrestrial	mol N eq	1.04E-02	7.43E+00
Ecotoxicity, freshwater	CTUe	2.93E+00	1.20E+03
Land use	Pt	1.95E+00	7.74E+03
Water use	m <sup>3</sup> depriv.	2.36E-02	1.39E+01
Resource use, fossils	MJ	3.66E+00	1.25E+02
Resource use, minerals and metals	kg Sb eq	1.41E-06	1.38E-04

Compared to there's a substantial confirmation of the environmental impacts, because the important use of fraying recycling process rather than shredding, which is more impactful

MWOOL®	2021	2022	2023
Climate change (t CO <sub>2</sub> eq.)	700	446	349
Water use (hm <sup>3</sup> depriv.)	0,10	0.04	0,03
Resource use, fossils (TJ)	9,4	5.8	4.77

GENERIC VIRGIN WOOL	2021	2022	2023
Climate change (t CO <sub>2</sub> eq.)	85,310	119,450	98,616
Water consumption (hm <sup>3</sup> depriv.)	15.64	21.90	18.08
Resource use, fossils (TJ)	140.6	196.9	162.63

From the measured data, it is evident that MWool® has brought the following savings in:

	2021	2022	2023
Climate change (t CO <sub>2</sub> eq.)	84,610	119,004	98,267
Savings	99.2 %	99.6 %	99.6 %
Water use (hm <sup>3</sup> depriv.)	15.54	21.86	18.05
Savings	99.3 %	99.8 %	99.8 %
Resource use, fossils (TJ)	131.2	191.1	162.63
Savings	93.3 %	97.0 %	97.1 %





## Recype®

When it comes to creating M Wool® colors, no added dye is needed for our company, since these fibers come already dyed from their former life. Through the Recype® process, our artisans of the raw material department manage to devise new wool colors just by mixing numerous and different shades of recycled wool fibers, developing actual 'recipes' of no-dye colors, which are archived and adapted to the kgs of yarns that need to be produced. Thanks to this technique, and more than 80 years in the field of wool recycling, Manteco has developed more than 1,000 colors. M Wool® color creation is not only technical, but also art and craftsmanship. Batches of recycled wool of the same color tone cannot always be found on the market.

The mastery of Manteco's color specialists during the Recype® process lies in compensating these differences in the Recype® composition, in order to achieve the same final share and guarantee production consistency, scalability and repeatability.





# Animal Welfare

On March 9, 2022, the amendment of Articles 9 and 41 of the Constitution of the Italian Republic entered into force, making the protection of animals and the environment one of the principles in the fundamental Charter on which the laws of the Republic are based.

In 2021, Manteco conducted an animal welfare action. We asked our virgin animal fiber suppliers to sign our policy related to animal welfare. Manteco’s Animal Welfare policy is based on the Five Animal Freedoms, in accordance with the IWTO “Specifications for Wool Sheep Welfare” guidelines which recommend [iwto.org](http://iwto.org)

- 1. Freedom from hunger and thirst through free access to water and food;
- 2. Freedom from discomfort provide an appropriate environment including comfortable shelters and rest areas;
- 3. Freedom from pain, injury and disease through rapid prevention, diagnosis and treatment;
- 4. Freedom to express normal behavioral characteristics by providing sufficient space, appropriate facilities and companionship of the same animal species;
- 5. Freedom from fear and discomfort by ensuring conditions and treatments that avoid mental suffering.

The official formalization of the animal welfare policy was an additional step to the actions already underway carried out by the company. In fact, over the years, increasing attention has been paid to the purchase of wool produced by responsible RWS certified farms and No Mulesing virgin wools.

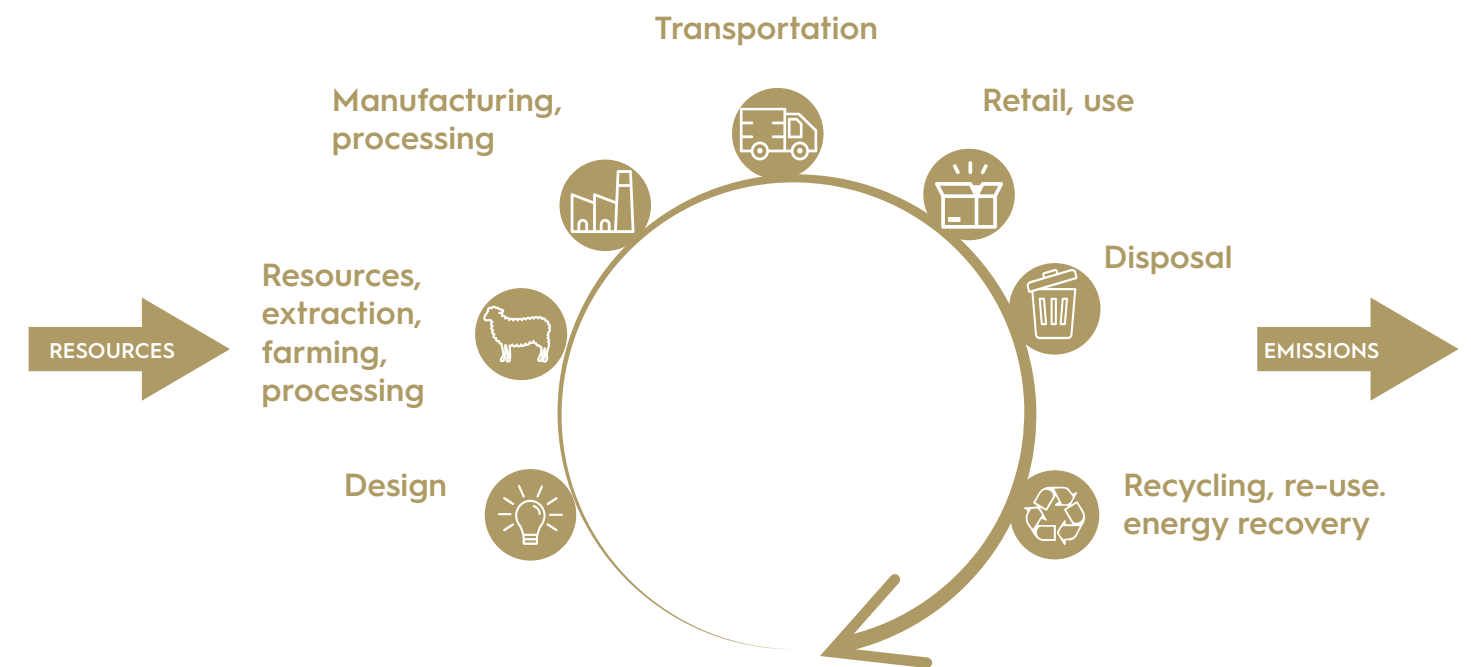
	2021	2022	2023
No-mulesing wool purchases Kg	491,037	589,610	462,449
	30.6%	29.7%	24,6%
RWS-certified wool purchases	147,045	162,172	399,881
	9.2%	8.2%	21,3%
Total wool purchases	1,600,063	1,981,663	1,876,551
Total responsible wool purchases	638,082	751,782	862,330
	39.9%	37.9%	45,9%

In 2023, Manteco’s purchases in responsible wool from RWS almost tripled. In total, the purchase of wool from responsible farms has increased by 8%.  
The purchase of wool from Europe was 39,670 Kg. equal to 2.1% of purchases.  
According to the latest Textile Exchange report, ([textileexchange.org](http://textileexchange.org)) RWS wool production is 4% of the global market, while No Mulesing (NM) and Ceased wool production is 16.6% of Australian wool production. Australian wool production is 18% of global production ([iwto.org](http://iwto.org))



# Circularity

Manteco was born circular. Its governance and its production model are circular, just like the creation and production of recyclable fabrics, and the use of recycled materials are the basis of the company's industrial project. By adopting the basic concept of Life Cycle Thinking, which refers to the need to assess the burden and benefits associated with products / sectors / projects that adopt a holistic perspective, from raw materials to the end of life<sup>2</sup>, Manteco has developed a series of activities within its production.



## 1. SUSTAINABLE DESIGN

Manteco® fabrics are designed to be durable and recycled. Thanks to investments in R&D, the company has developed specific know-how in the design of fabrics that can be easily reused in production cycles. The "Sustainable Design" initiative shows how the company thinks in a circular way. The recycling phase is not the last step in the life cycle of the fabric, but the starting point for the sustainable production of new fabrics.

## 2. ZERO WASTE

The production waste coming from the Manteco® value chain is largely recycled and reintroduced into the production cycle. The "Zero Waste" project aims to ensure that waste is not considered as such, but as a precious raw material for the creation of a new product, leading to both economic and environmental benefits.

In 2023, Manteco® recovered 253,660 kg of industrial waste and, following a careful sorting process, 79.4% of this was reintroduced in the production cycle.

<sup>2</sup>European Commission Service Site [eplca.jrc.ec.europa.eu](https://eplca.jrc.ec.europa.eu)



Year	Total recovered materials kg	Total Reused materials kg	%
2021	234,800	158,600	67.5%
2022	215,372	153,990	71.5%
2023	253,660	201,547	79.4%

### 3. Project43

The manufacturing of garments leads to a fabric wastage, from 4% to 20%, depending on the design and shape. Through Project43, these scraps return to Manteco and are given a new life. This way, a complete circular project is created, with undoubted environmental benefits, as there is a waste optimization, the production of recycled fabrics with completely traced materials, the promotion of a real culture of recycling. Through a partner company, Manteco purchases waste from its customers and issues a certificate stating the quantity of fabric that has been saved from downcycling processes or even worse.



P43				
Year	2020	2021	2022	2023
Total kg of recovered offcuts	1,780	80,000	53,600	69,067

### 4. PRODUCTION OF UPCYCLED POCHETTES AND OTHER GADGETS

Manteco® has found a way to make the most of deadstock fabric rolls and discarded colorings and trials leftovers from collection development. Instead of being wasted, they are upcycled into Manteco Pochettes, which are used as a container for our textile swatches when we send selections to our customers (later usable as a fancy laptop or documents case). Deadstock fabric rolls and discarded colorings and trials leftovers from collection development can also be upcycled into Manteco® UpBlankets ([manteco.com/upblanket](https://manteco.com/upblanket)), one-of-a-kind, home-bound blankets made the we currently use as a special gift.

Since 2023, thanks to our life cycle assessment on M<sup>Wool</sup>® fibers, it's been possible for us to calculate the impacts and environmental savings of the take-back offcuts in a timely manner. In 2023, thanks to Project43, we recovered 69,067 kg of garment-making offcuts.



# Certifications & initiatives

Any claim of sustainability made by Manteco is supported by evidence that makes it unassailable. The legislations of various world states are gearing up against 'greenwashing', which is why Manteco, before making any kind of communication, creates a scaffold to support it. Manteco's sustainability assertions follow the principles of UNI ISO /TS 17033:2020, which provide the following guidelines:

**RELIABILITY**  
**TRANSPARENCY**  
**RELEVANCE**  
**STAKEHOLDER INVOLVEMENT**  
**EQUITY**

In order to fulfill the principles listed above, Manteco has conducted a series of actions related to obtaining certifications and initiatives.



Timeline of the certifications we have obtained so far:

- 2017** ● Global Recycled Standard (GRS): it certifies the amount of recycled raw material in a fabric and its value chain.
- 4sustainability® Commitment and the implementation of the Chemical Management Protocol (CHEM) for the elimination of toxic and hazardous substances in production through the MSRL ZDHC (Manufacturing Restricted Substances List - Zero Discharge of Hazardous Chemicals).
- 2019** ● Responsible Wool Standard (RWS); voluntary standard addressing the welfare of sheep and the management of the land they graze. In 2022 this standard Textile Exchange merged this standard along with RMS (Responsible Mohair Standard) and RAS (Responsible Alpaca Standard) into the RAF Responsible Animal Standard.
- 2020** ● Organic Content Standard (OCS) that tracks the presence of organically produced fiber throughout the supply chain.
- 2021** ● European Flax® that ensures traceability of the presence of fine flax grown in France, Belgium and the Netherlands.
- 2022** ● EPD® Environmental Product Declaration of a 100% MWOol® yarn, which transparently reports environmental data for a product's life cycle according to the international ISO 14025 standard.
- ZDHC Supplier to Zero Foundation Level, it certifies the application of MSRL ZDHC at the Foundational level.
- 2023** ● EPD® Environmental Product Declaration of fabrics collections: ReviWool® blend fabrics, MWOol® blend fabrics, Pure MWOol® fabrics, Woolten® fabrics.



Timeline - initiatives:

- 2019** ● BCI Better Cotton Initiative, facilitating best practices in cotton farming through education, working conditions and environmental considerations.
- 2021** ● The Ellen MacArthur Foundation is an international charity that develops and promotes the circular economy in order to tackle some of the biggest challenges of our time, such as climate change, biodiversity loss, waste, and pollution.  
([ellenmacarthurfoundation.org](https://ellenmacarthurfoundation.org))  
Manteco's participation in the Ellen Mc Arthur Foundation aims to accelerate the transition to a circular economy through the six thematic areas: learning, business, institutions governments and cities, insight and analysis, systemic initiatives, and communication. Manteco participated in both workshops organized by the foundation.
- 2021** ● Monitor for Circular Fashion- SDA Bocconi, which through the collaboration of virtuous companies disseminates best practices of circular fashion, promoting technical, managerial and scientific skills in order to contribute to the transition to circular business models.  
([www.sdabocconi.it/circularfashion](https://www.sdabocconi.it/circularfashion))







# EPD® Environmental product declaration

In 2023, Manteco® enhanced its capacity to communicate the environmental impact of its textiles. By conducting a comprehensive mapping of the environmental impacts of its production processes through a Life Cycle Assessment (LCA) study, Manteco® also achieved the Environmental Product Declaration (EPD) certification for its most significant fabric collections. The Environmental Product Declaration (EPD®) is a verified, transparent environmental label falling under Type III environmental declarations as per the ISO 14020 series standards, particularly ISO 14025. This standardized tool quantifies the environmental impacts associated with a product throughout its entire life cycle, calculated using the LCA methodology. To obtain the EPD® label, a detailed technical study is required, conducted in accordance with specific Product Category Rules (PCR) for the product or service in question. An independent verifier then assesses this study to ensure its accuracy, credibility, and compliance with the relevant PCR, thus guaranteeing comparability. As a cradle-to-grave analysis, EPDs provide comprehensive information on environmental performance at every stage of the product's life cycle, from raw material acquisition and energy use to material resource consumption.

In the next page, you will find the results of the environmental performance indicators for 1 sqm of declared unit.



# ReviWool®

EPD analyzing the impact of all the fabrics made with at least 75% or 80% ReviWool® fibers blended with polyamide

IMPACT CATEGORY	UNIT	UPSTREAM		CORE			DOWNSTREAM				TOTAL
		TotalL Upstream	A1	Total Core	A2	A3	Total Downstream	C1	C2	C3	
GWP total	kg CO <sub>2</sub> eq.	8,30E+00	8,30E+00	6,00E+00	1,31E-01	5,87E+00	5,65E-01	9,24E-02	7,39E-03	4,66E-01	1,49E+01
GWP fossil	kg CO <sub>2</sub> eq.	2,61E+00	2,61E+00	5,79E+00	1,31E-01	5,66E+00	1,97E-01	9,22E-02	7,38E-03	9,74E-02	8,59E+00
GWP biogenic	kg CO <sub>2</sub> eq.	4,66E+00	4,66E+00	1,53E-01	4,28E-05	1,53E-01	3,68E-01	9,12E-05	2,88E-06	3,68E-01	5,19E+00
GWP luluc	kg CO <sub>2</sub> eq.	1,02E+00	1,02E+00	5,87E-02	7,15E-05	5,86E-02	6,38E-05	5,87E-05	2,65E-06	2,39E-06	1,08E+00
ODP	kg CFC 11 eq.	2,85E-07	2,85E-07	6,12E-07	2,76E-08	5,85E-07	1,95E-08	1,66E-08	1,61E-09	1,25E-09	9,17E-07
AP	mol H <sup>+</sup> eq.	1,40E-02	1,40E-02	2,37E-02	2,70E-03	2,10E-02	6,61E-04	4,61E-04	3,72E-05	1,63E-04	3,83E-02
EP freshwater	kg P eq.	2,82E-04	2,82E-04	3,30E-04	7,98E-07	3,29E-04	1,84E-06	1,44E-06	6,45E-08	3,43E-07	6,14E-04
EP marine	kg N eq.	5,97E-03	5,97E-03	5,37E-03	6,97E-04	4,67E-03	2,99E-04	1,44E-04	1,26E-05	1,43E-04	1,16E-02
EP terrestrial	mol N eq.	3,64E-02	3,64E-02	4,65E-02	7,74E-03	3,88E-02	2,52E-03	1,60E-03	1,39E-04	7,83E-04	8,54E-02
POCP	kg NMVOC eq.	1,14E-02	1,14E-02	1,30E-02	2,04E-03	1,10E-02	8,46E-04	5,12E-04	3,95E-05	2,94E-04	2,53E-02
ADP minerals & metals	kg Sb eq.	2,08E-05	2,08E-05	4,20E-05	2,98E-07	4,17E-05	1,34E-06	1,30E-06	2,60E-08	2,34E-08	6,41E-05
ADP fossil	MJ, net calorific value	3,83E+01	3,83E+01	1,03E+02	1,82E+00	1,01E+02	1,56E+00	1,33E+00	1,10E-01	1,19E-01	1,43E+02
WDP	m <sup>3</sup> world eq. deprived	7,78E+00	7,78E+00	1,54E+00	4,29E-03	1,54E+00	1,28E-02	9,36E-03	3,52E-04	3,09E-03	9,33E+00

[link EPD ReviWool®](#)



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# MWool®

EPD analyzing the impact of all the fabrics made with at least 70% MWool® fibers blended with polyamide

IMPACT CATEGORY	UNIT	UPSTREAM		CORE			DOWNSTREAM				TOTAL
		TotalL Upstream	A1	Total Core	A2	A3	Total Downstream	C1	C2	C3	
GWP total	kg CO <sub>2</sub> eq.	5,08E+00	5,08E+00	6,46E+00	8,24E-02	6,38E+00	1,83E+00	1,31E-01	1,05E-02	1,69E+00	1,34E+01
GWP fossil	kg CO <sub>2</sub> eq.	2,32E+00	2,32E+00	6,25E+00	8,24E-02	6,17E+00	2,83E-01	1,31E-01	1,05E-02	1,41E-01	8,85E+00
GWP biogenic	kg CO <sub>2</sub> eq.	2,08E+00	2,08E+00	1,89E-01	2,93E-05	1,89E-01	1,54E+00	1,30E-04	4,09E-06	1,54E+00	3,81E+00
GWP luluc	kg CO <sub>2</sub> eq.	6,85E-01	6,85E-01	2,73E-02	3,59E-05	2,73E-02	9,06E-05	8,35E-05	3,76E-06	3,41E-06	7,13E-01
ODP	kg CFC 11 eq.	2,49E-07	2,49E-07	6,26E-07	1,77E-08	6,08E-07	2,77E-08	2,36E-08	2,29E-09	1,78E-09	9,02E-07
AP	mol H <sup>+</sup> eq.	1,23E-02	1,23E-02	2,45E-02	9,20E-04	2,36E-02	9,40E-04	6,55E-04	5,28E-05	2,32E-04	3,77E-02
EP freshwater	kg P eq.	2,10E-04	2,10E-04	3,80E-04	5,94E-07	3,79E-04	2,62E-06	2,04E-06	9,15E-08	4,89E-07	5,92E-04
EP marine	kg N eq.	4,92E-03	4,92E-03	4,42E-03	2,42E-04	4,18E-03	4,25E-04	2,04E-04	1,79E-05	2,03E-04	9,76E-03
EP terrestrial	mol N eq.	3,23E-02	3,23E-02	4,39E-02	2,68E-03	4,13E-02	3,58E-03	2,27E-03	1,97E-04	1,12E-03	7,98E-02
POCP	kg NMVOC eq.	9,69E-03	9,69E-03	1,29E-02	7,31E-04	1,21E-02	1,20E-03	7,28E-04	5,60E-05	4,19E-04	2,38E-02
ADP minerals & metals	kg Sb eq.	1,52E-05	1,52E-05	4,97E-05	2,45E-07	4,95E-05	1,91E-06	1,84E-06	3,69E-08	3,35E-08	6,68E-05
ADP fossil	MJ, net calorific value	3,61E+01	3,61E+01	1,12E+02	1,18E+00	1,11E+02	2,22E+00	1,89E+00	1,56E-01	1,69E-01	1,50E+02
WDP	m <sup>3</sup> world eq. deprived	5,40E+00	5,40E+00	1,21E+00	3,22E-03	1,21E+00	1,82E-02	1,33E-02	4,99E-04	4,41E-03	6,63E+00

[link EPD MWool®](#)



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# Pure®

EPD analyzing the impact of all the “Pure 100% M Wool®” fabrics

IMPACT CATEGORY	UNIT	UPSTREAM		CORE			DOWNSTREAM				TOTAL
		TotalL Upstream	A1	Total Core	A2	A3	Total Downstream	C1	C2	C3	
GWP total	kg CO <sub>2</sub> eq.	4,46E+00	4,46E+00	6,62E+00	7,65E-02	6,54E+00	2,32E+00	1,34E-01	1,08E-02	2,17E+00	1,34E+01
GWP fossil	kg CO <sub>2</sub> eq.	1,77E+00	1,77E+00	6,39E+00	7,65E-02	6,32E+00	2,89E-01	1,34E-01	1,08E-02	1,44E-01	8,45E+00
GWP biogenic	kg CO <sub>2</sub> eq.	1,93E+00	1,93E+00	1,94E-01	2,92E-05	1,94E-01	2,03E+00	1,32E-04	4,23E-06	2,03E+00	4,15E+00
GWP luluc	kg CO <sub>2</sub> eq.	7,56E-01	7,56E-01	2,79E-02	2,82E-05	2,79E-02	9,27E-05	8,53E-05	3,89E-06	3,49E-06	7,84E-01
ODP	kg CFC 11 eq.	1,96E-07	1,96E-07	6,42E-07	1,66E-08	6,25E-07	2,83E-08	2,41E-08	2,36E-09	1,82E-09	8,66E-07
AP	mol H <sup>+</sup> eq.	1,18E-02	1,18E-02	2,45E-02	4,00E-04	2,41E-02	9,61E-04	6,70E-04	5,46E-05	2,37E-04	3,73E-02
EP freshwater	kg P eq.	1,99E-04	1,99E-04	3,87E-04	6,41E-07	3,87E-04	2,68E-06	2,09E-06	9,46E-08	4,99E-07	5,89E-04
EP marine	kg N eq.	5,11E-03	5,11E-03	4,39E-03	1,14E-04	4,28E-03	4,35E-04	2,08E-04	1,85E-05	2,08E-04	9,94E-03
EP terrestrial	mol N eq.	3,22E-02	3,22E-02	4,35E-02	1,26E-03	4,23E-02	3,66E-03	2,32E-03	2,04E-04	1,14E-03	7,94E-02
POCP	kg NMVOC eq.	9,75E-03	9,75E-03	1,28E-02	3,69E-04	1,25E-02	1,23E-03	7,44E-04	5,79E-05	4,28E-04	2,38E-02
ADP minerals & metals	kg Sb eq.	1,60E-05	1,60E-05	5,07E-05	2,61E-07	5,04E-05	1,95E-06	1,88E-06	3,81E-08	3,42E-08	6,87E-05
ADP fossil	MJ, net calorific value	2,56E+01	2,56E+01	1,15E+02	1,12E+00	1,13E+02	2,27E+00	1,93E+00	1,61E-01	1,73E-01	1,42E+02
WDP	m <sup>3</sup> world eq. deprived	5,78E+00	5,78E+00	1,25E+00	3,49E-03	1,24E+00	1,86E-02	1,36E-02	5,15E-04	4,50E-03	7,04E+00

[link EPD Pure®](#)



Scan this  
Qr code

# Woolten®

EPD analyzing the impact of all the fabrics made with patented Woolten yarn:  
40% M Wool®, 30% Lenzing Tencel® and 30% Polyamide

IMPACT CATEGORY	UNIT	UPSTREAM		CORE			DOWNSTREAM				TOTAL
		TotalL Upstream	A1	Total Core	A2	A3	Total Downstream	C1	C2	C3	
GWP total	kg CO <sub>2</sub> eq.	1,87E+00	1,87E+00	5,04E+00	6,69E-02	4,97E+00	1,98E-01	9,16E-02	7,21E-03	9,89E-02	7,10E+00
GWP fossil	kg CO <sub>2</sub> eq.	7,85E-01	7,85E-01	1,38E-01	2,42E-05	1,38E-01	1,03E+00	9,06E-05	2,82E-06	1,03E+00	1,95E+00
GWP biogenic	kg CO <sub>2</sub> eq.	3,29E-01	3,29E-01	1,96E-02	2,72E-05	1,95E-02	6,33E-05	5,83E-05	2,59E-06	2,38E-06	3,49E-01
GWP luluc	kg CO <sub>2</sub> eq.	2,98E+00	2,98E+00	5,19E+00	6,70E-02	5,13E+00	1,23E+00	9,18E-02	7,22E-03	1,13E+00	9,41E+00
ODP	kg CFC 11 eq.	2,53E-07	2,53E-07	5,15E-07	1,47E-08	5,00E-07	1,93E-08	1,65E-08	1,57E-09	1,24E-09	7,87E-07
AP	mol H <sup>+</sup> eq.	1,16E-02	1,16E-02	1,92E-02	6,14E-04	1,86E-02	6,56E-04	4,58E-04	3,64E-05	1,62E-04	3,15E-02
EP freshwater	kg P eq.	1,37E-04	1,37E-04	2,98E-04	4,77E-07	2,97E-04	1,83E-06	1,43E-06	6,30E-08	3,41E-07	4,36E-04
EP marine	kg N eq.	3,24E-03	3,24E-03	3,53E-03	1,64E-04	3,36E-03	2,97E-04	1,43E-04	1,23E-05	1,42E-04	7,06E-03
EP terrestrial	mol N eq.	2,39E-02	2,39E-02	3,45E-02	1,82E-03	3,27E-02	2,50E-03	1,59E-03	1,36E-04	7,80E-04	6,09E-02
POCP	kg NMVOC eq.	7,07E-03	7,07E-03	1,02E-02	5,04E-04	9,67E-03	8,40E-04	5,09E-04	3,86E-05	2,93E-04	1,81E-02
ADP minerals & metals	kg Sb eq.	1,37E-05	1,37E-05	3,87E-05	2,11E-07	3,85E-05	1,34E-06	1,29E-06	2,54E-08	2,34E-08	5,37E-05
ADP fossil	MJ, net calorific value	2,83E+01	2,83E+01	8,98E+01	9,77E-01	8,88E+01	1,55E+00	1,32E+00	1,07E-01	1,18E-01	1,20E+02
WDP	m <sup>3</sup> world eq. deprived	3,26E+00	3,26E+00	9,82E-01	2,62E-03	9,79E-01	1,27E-02	9,30E-03	3,43E-04	3,08E-03	4,25E+00

[link EPD Woolten®](#)



Scan this  
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# Responsible chemical management

Production chemical management and product chemical compliance are pillars of Manteco’s sustainability policy. According with 4Sustainability® chemical management protocol, also in 2023 Manteco has mapped and qualified the supply chain joining the level Advanced.

A separate chapter deals with chemical risk management with regard to recycled raw materials. In this case, an accomplished chemical management that succeeds in predicting chemical risk is currently not applicable because the raw materials that are used have different origins, dyeing techniques, ennobling techniques, and production periods. Thanks to an effective sampling method, fiber samples can be obtained whose analysis results are representative of the batch, but theoretically each fiber in each individual batch of recycled wool could have its own history. For this reason, Manteco punctually performs chemical tests in a systematic way at the inlet of purchased recycled wool in order to verify its compliance with worldwide mandatory regulations and brand PRSLs. In this context, Manteco respects the precautionary principle\*.

In 2023, Manteco achieved the ZDHC Progressive level of the Supplier to Zero program. Integrated management of laboratory results is carried out through the MData software, which makes it possible to verify, in a comparative manner, the performance of each individual parameter. This structured data organization allows Manteco to have a clear view of its supply chain. As a result, there is a factual and circumstantial drive to improve product quality.

# Supply chain’s physical-chemical-dyeing compliance

Analytical verification of quality control parameters of incoming raw materials, process and finished product are carried out both at the company’s three in-house laboratories (raw materials, physical, dyeing) and at ISO 17025-certified external laboratories.

The large number of laboratory checks led to the following costs at external laboratories:

## Cost for chemical management and compliance testing

	2021	2022	2023
Total costs in EURO	533,661	427,345	492,262

*\*United Nations (UN), “RIO Declaration on Environment and Development,” 1992. The principle states, “In order to protect the environment, States will broadly apply, according to their capabilities, the precautionary approach. Where there is a risk of serious or irreversible damage, the absence of absolute scientific certainty should not serve as an excuse for postponing the adoption of cost-effective measures directed at preventing environmental degradation.”*





# Water consumption

The production activity does not produce industrial wastewater, and the only discharges present are domestic wastewater produced by the use of toilets, which are neglected in this analysis. Companies that carry out wet processing on behalf of Manteco are authorized to discharge industrial wastewater in accordance with legal requirements and perform the prescribed periodic inspections. The wastewater is purified at the G.I.D.A. Consortium [www.gida-spa.it](http://www.gida-spa.it)

## Water consumption

	2021	2022	2023
Total water used (m³)	1,179	1,381	1,651

As previously described, the Recype® process results in the saving of 0.226 m³ of water per kg of dyed wool fabric.



# Soil & energy

The industrial buildings where Manteco operates derive from the renovation and upgrading of old buildings, which were modernized and made more functional according to the company's production needs and, at the same time, made safe based on current labor safety laws. Manteco's need to acquire new production space in the face of turnover growth was to avoid consuming additional land through the construction of new facilities. The renovation of the buildings was accompanied by the installation of photovoltaic panels on the roofs, which made it possible to reduce the amount of electricity purchased from third parties.

The company is equipped with the following photovoltaic systems: The company's energy consumption consists mainly of electricity for lighting the workplaces and natural gas for their heating. Consumption resulting from the use of company transportation vehicles is also reported\*.

Electricity	Electricity consumption	u.m	2021	2022	2023
		KWh	941,715	854,509	1,019,272
	GJ	3,390	3,076	3,669	
	Purchased electricity	KWh	653,307	548,441	683,187
		GJ	2,352	1,974	2,459
	Electricity produced by photovoltaics	KWh	617,869	656,110	635,419
		GJ	2,224	2,362	2,287
	Of which produced by photovoltaic system and sold to grid operator	KWh	329,461	350,542	299,334
		GJ	1,186	1,262	1,077
	Of which produced by photovoltaic system and consumed in-house	KWh	288,408	306,068	336,085
		GJ	1,038	1,102	1,210
Electricity consumed by photovoltaics	%	30.6	35.8	32,9	
Natural Gas	Heating consumption	S^m³	23,012	20,204	29,668
		GJ	829	721	1,074
Company vehicles	Diesel fuel consumption	l	38,229	34,482	32,150
		GJ	1,374	1,239	1,148
	Gasoline fuel consumption	l	2,759	4,855	5,135
		GJ	90	158	170
Total energy consumption		GJ	5,683	5,194	6061

\*The conversion coefficients published annually by the Department for Environment Food & Rural Affairs (DEFRA) of the U.K. government were used for the GJ conversions.







Building n° 1: Via della Viaccia, 19  
Construction date: 1970  
Total surface: 6,783 mq  
Covered surface: 4,863 mq

Building n° 2: Via dei Mille, 10  
Construction date: 1962  
Total surface: 6,311 mq  
Covered surface: 5,834 mq

Building n° 3: Via della Viaccia, 27,  
29 e Via 1 Maggio 31, 33  
Construction date: 1978  
Total surface: 5,663 mq  
Covered surface: 3,839 mq

Building n° 4: Via dei Mille, 10  
Construction date: 1962  
Total surface: 6,311 mq  
Covered surface: 5,834 mq

■ Buildings purchased prior to 2021   ■ Building purchased in 2022

Although Manteco produces more energy than is purchased, the productivity of Manteco's PV plants is linked to seasonality, which makes them particularly efficient during the summer months. During such periods, Manteco's energy needs are less than the electricity generated by the plants. For this reason, a good portion of the electricity generated is sold to the grid operator (299,334 KWh equivalent to the 47.1% of production). On the other hand, during winter periods, the company needs to supply itself from the grid.



# MANTECO®

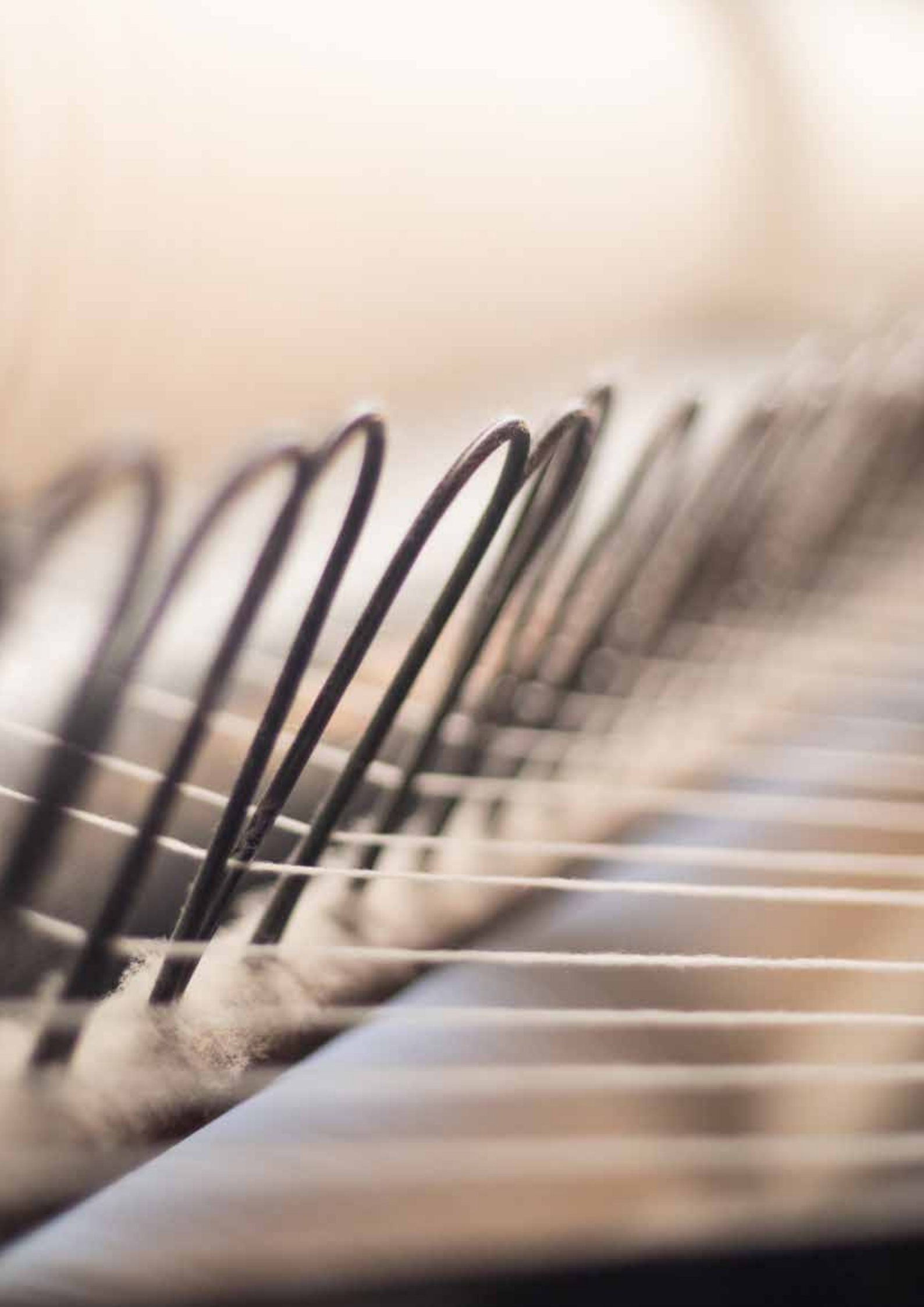


FULL ELECTRIC VEHICLE

☀️ **POWERED BY MANTECO SOLAR PANELS**

In 2023 Manteco began decarbonising the company's vehicles, through the purchase of three electric Fiat Doblo'. Three charging columns have been installed inside the plant, so as to be able to change vehicles preferably with self-produced electricity





# Emissions

Manteco’s direct emissions (Scope 1) are related to the consumption of natural gas used in the company for heating and the combustion of gasoline and diesel in company vehicles. Scope 1 emissions do not include refrigerant gases from air-conditioning systems (F-Gas) because no maintenance work was required during 2022 as a result of established leaks of these gases. Manteco’s indirect (Scope 2) emissions are related to purchased electricity.

In line with the GHG Protocol, the calculation of indirect Scope 2 emissions is based on purchased electricity and does not take into account electricity produced by photovoltaics and sold to the grid operator. Thus, the installation avoided the CO<sub>2</sub> emission into the atmosphere associated with the purchase of additional electricity and contributed to the production of energy from renewable sources.

	2021	2022	2023
Scope 1 - Direct Emissions	148.06 t CO <sub>2</sub> eq	102.90 t CO <sub>2</sub> eq	158.41 t CO <sub>2</sub> eq
Gas for heating	46.52 t CO <sub>2</sub> eq	40.73 t CO <sub>2</sub> eq	60.82 t CO <sub>2</sub> eq
Diesel for transportation	96.04 t CO <sub>2</sub> eq	51.68 t CO <sub>2</sub> eq	85.52 t CO <sub>2</sub> eq
Gasoline for transportation	6.05 t CO <sub>2</sub> eq	10.50 t CO <sub>2</sub> eq	12.07 t CO <sub>2</sub> eq

	2021	2022	2023
Scope 2 - Non-direct Emissions			
Location-based	170.19 t CO <sub>2</sub> eq	169.41 t CO <sub>2</sub> eq	273.16 t CO <sub>2</sub> eq
Market-based	299.59 t CO <sub>2</sub> eq	250.40 t CO <sub>2</sub> eq	465.96 t CO <sub>2</sub> eq

	2021	2022	2023
Scope 1 + Scope 2 Location-based	318.25 t CO <sub>2</sub> eq	272.31 t CO <sub>2</sub> eq	413.57 t CO <sub>2</sub> eq
Scope 1 + Scope 2 Market-based	147.65 t CO <sub>2</sub> eq	353.30 t CO <sub>2</sub> eq	624.37 t CO <sub>2</sub> eq

Data from the DEFRA database (Department for Environment, Food & Rural Affairs - GOV.UK) were used for the calculation of Scope 1. The respective emission factors were used for each reporting year. The following climate-altering gases were considered in the calculation: CO<sub>2</sub>, CH<sub>4</sub> and NO<sub>2</sub>.  
For Scope 2 location-based calculation, emission factors published annually by ISPRA (Istituto Superiore per la Protezione e Ricerca Ambientale) were used.  
For Scope 2 market-based calculation, the emission factors published annually by the Association of Issuing Bodies (AIB) “European Residual Mix” were used.



# Waste

As part of its Zero Waste policy, Manteco takes great care in sorting the company’s physiological waste. Both unaccounted municipal waste and textile waste (accounted for with MUD declaration), are collected by the Tuscan multi-utility Alia ([www.aliaserviziambientali.it](http://www.aliaserviziambientali.it)).

Spent toner collection, accounted for with MUD declaration, is carried out by the company IoRecupero srl ([www.iorecupero.it](http://www.iorecupero.it)).

The activities carried out by Manteco at its sites are mainly office activities, warehouse activities, quality control activities, and packaging of fabrics; therefore, the waste produced is mainly of processing waste, due to cutting operations, and in small quantities packaging.

## Produced waste (kg)

	2021	2022	2023
Textile waste fibers	40,820	52,950	61880
Printing toners	136	132	168
Components removed from WEEE	110	//	//
Mixed demolition waste	//	//	//
Old plastic crates	3,328	1,596	//
Paper and cardboard	1,708	//	//
Pipes and lamps	110	//	//
Mixed packaging	1,980	//	1443
Other non-hazardous waste (septic tanks)	4,800	//	//

Year-to-year comparisons are not feasible at this time, as Manteco is working toward the goal of collecting waste data in a more timely manner. It is a path of harmonization that Manteco is pursuing over the years in order to refine the indicators and measures.  
Waste are 1,2% of the total processed material.





For the production of its fabrics, Manteco purchases fibers and yarns. Recycled fibers are preferably purchased in accordance with the GRS -Global Recycled Standard, while virgin wool - as already described - can come from responsible production in accordance with the RWS - Responsible Wool Standard or from No-Mulesing farms.

The company also develops collections of fabrics produced from recycled cotton, organic cotton, FSC Viscose (whose producers are rated Green Shirt according to the Canopy scheme), European Flax certified linen, BCI cotton.

	2021	2022	2023
Total raw material and yarns purchased (kg)	4,742,547	5,233,214	5,223,871
Raw material and yarns with sustainability certification (kg)	2,049,127	2,871,347	2,403,954
Raw material with sustainability certification (%)	43.2%	54.0%	46.0%
Raw material with recycled material characteristics (kg)	1,479,128	1,943,848	1,724,434
Raw material with recycled material characteristics (%)	31.2%	37.1%	32.9%





# Packaging

For product packaging, the company mainly uses plastic film and various paper and cardboard materials. For the purpose of better reporting, the company has decided to classify packaging materials according to the bands defined by the CONAI Environmental Contribution<sup>6</sup>, so that different packaging can be grouped together according to unambiguous verification indicators<sup>7</sup>.

## Plastic

Range	2022		2023		Eligible for sorting and recycling	Circuit
	Kg	%	Kg	%		
A1	17,740	45%	26,028	52%	Yes	Trade and industry
A2	5,444	14%	6,012	12%	Yes	Trade and industry
B2	15,343	39%	17,638	35%	Yes	Domestic
C	539	2%	150	1%	No	
Total	39,066		49,828			

99% of plastic packaging purchased by Manteco is recyclable. 16,600 kilograms of polyethylene film (LDPE) used to package fabric rolls for shipping are have a 30% of recycled content.

## Paper

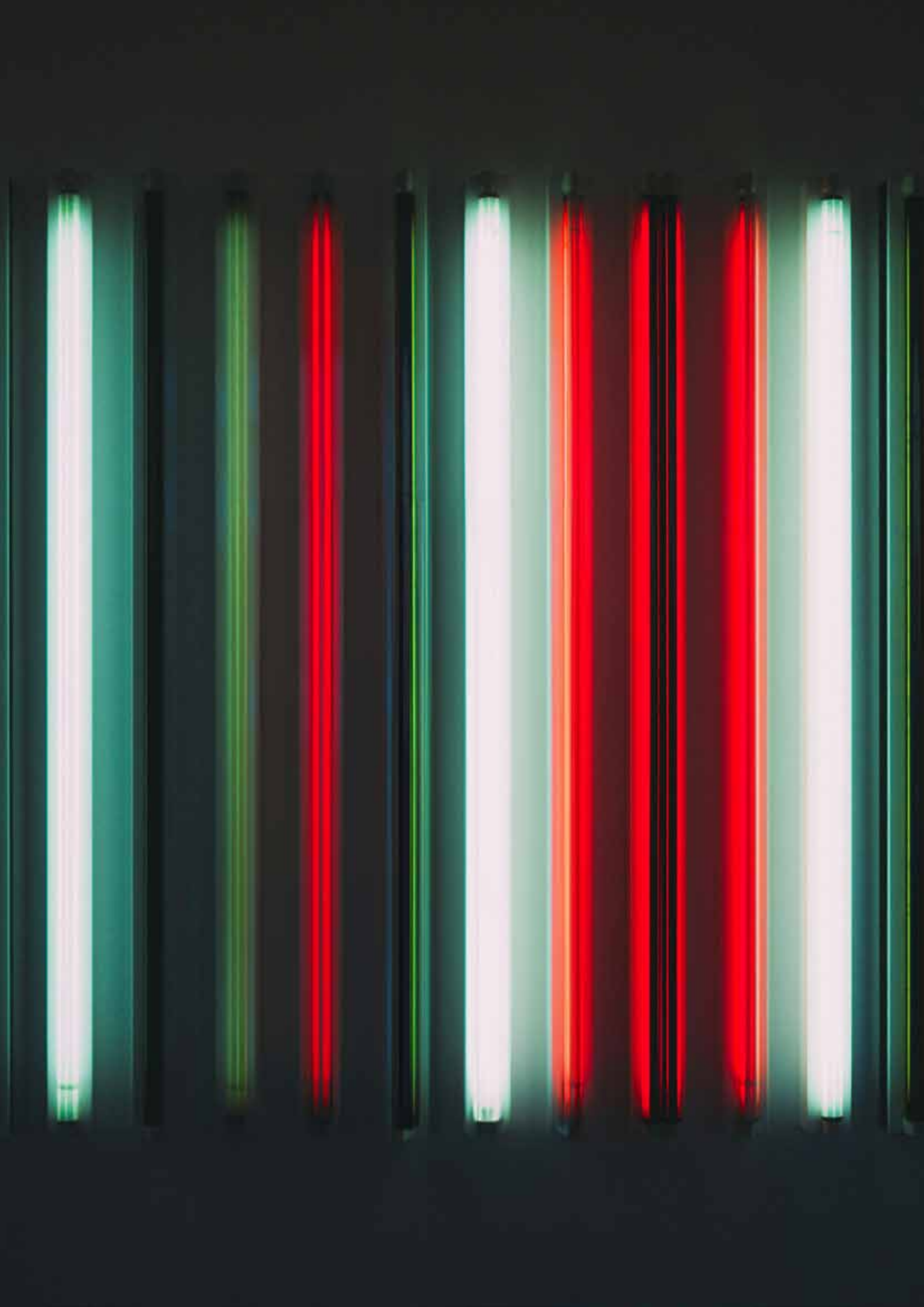
	2022	2023
Range A1 Kg. 14,596	15,150	14,596





MANTECO<sup>®</sup>  
FOR RESEARCH





## R&D

A company’s growth comes through investment in research and development. Technical-scientific innovation pushes Manteco to take unexplored paths. Stylistic research, quality performance and responsible production are the foundations on which Manteco’s new collections are developed. Manteco’s goal is to make the style, quality and sustainability departments of the brands dialogue and tune with each other. It can be easily summarized that in Manteco the creation of a collection is the union of a stylistic idea reported on production principles that guarantee quality, circularity and production efficiency.

	2021	2022	2023
New styles developed by Manteco	1,813	1,503	1,603

## Digital Transformation

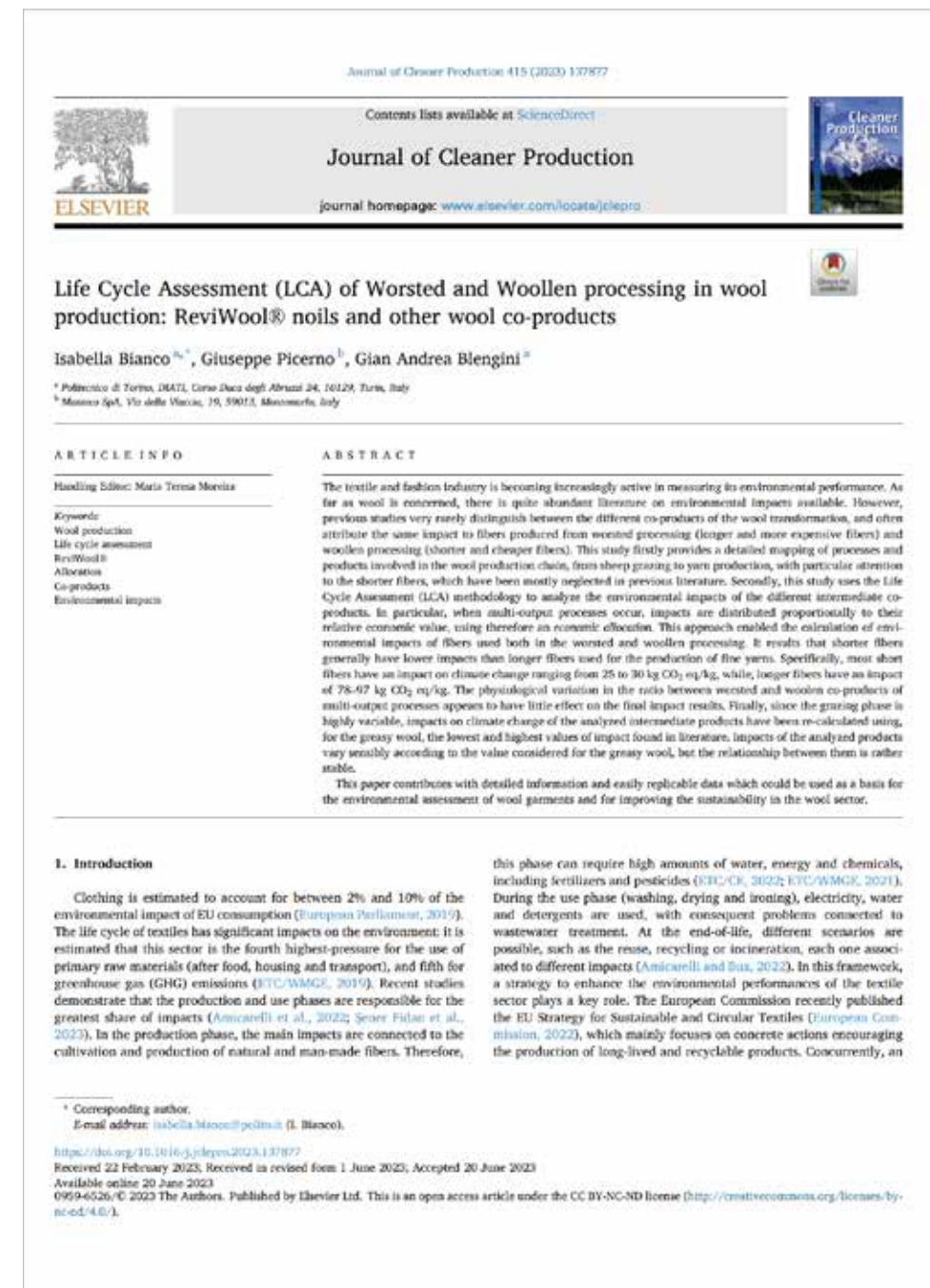
Data, the speed of information exchange and the creation of blockchains are fundamental elements in the relationships between companies. Manteco actively pursues its digitization policy. MTrace and MData are a clear example of how the company has welcomed technological innovation within its business model, recognizing its importance and potential. The digitization of collections started in 2017, when Manteco created a digital archive of all the fabrics it produces. This archive allows us to provide a fast and efficient service to customers and, at the same time, manages to reduce the environmental impact of express shipments.



# Academic research

Environmental impact calculations performed are the result of an active and intensive collaboration with the Politecnico di Torino. Each impact figure described is derived from the processing of measurements made on appropriate mathematical models.

After M Wool® also ReviWool® LCA has received the scientific community's endorsement through the study publication on [Journal Cleaner Production](#)







MANTECO<sup>®</sup>  
FOR COMMUNITY



# Traceability and transparency

Traceability and transparency are fundamental pillars of sustainability. By tracing the supply chain, a company can understand its complexity, strengths, and weaknesses. This is essential for enhancing its merits and implementing appropriate corrective actions where needed. "Improving traceability and transparency has become a priority for the apparel and footwear industry. Consumers, governments, and civil society are demanding responsible business behavior and calling on the industry to identify and address actual and potential negative impacts in the areas of human rights, the environment, and human health."\* To manage supply chain traceability, Manteco has developed the MTrace software. This IT tool makes verifying the sources of supply and the subcontractor companies involved in the production of an order an extremely simple operation for Manteco. Product traceability is becoming increasingly important due to legislative proposals currently being discussed by legislative bodies. To prepare for upcoming actions on traceability of both legislative and private nature, Manteco participated in the UNECE blockchain pilot project. ([ECE/TRADE/C/CEFACT/2023/19](https://unece.org/Trade/C/CEFACT/2023/19)) Thanks to this exercise, the company promptly implemented the necessary changes to the MTrace program to be prepared for future requests for data loading into a blockchain system.



In the next page the used made for M Wool®

\*Recommendation No. 46 UNECE: Enhancing traceability and transparency of sustainable value chains in the garment and footwear sector ECE/TRADE/463



MWOOL® RECYCLED WOOL USE CASE

TRACEABLE ASSET

MWool® recycled wool fabric

CLAIM

This fabric is made of 100% recycled MWool®, GRS certified, and completely manufactured in Italy, Tuscany, in facilities part of the manteco System, according to the Manteco Charter of Supply Chain Commitments, that defines the goals, the environmental and social standards to be followed by our partners. The fabric has been traced according to the UNECE methodology.

MSystem



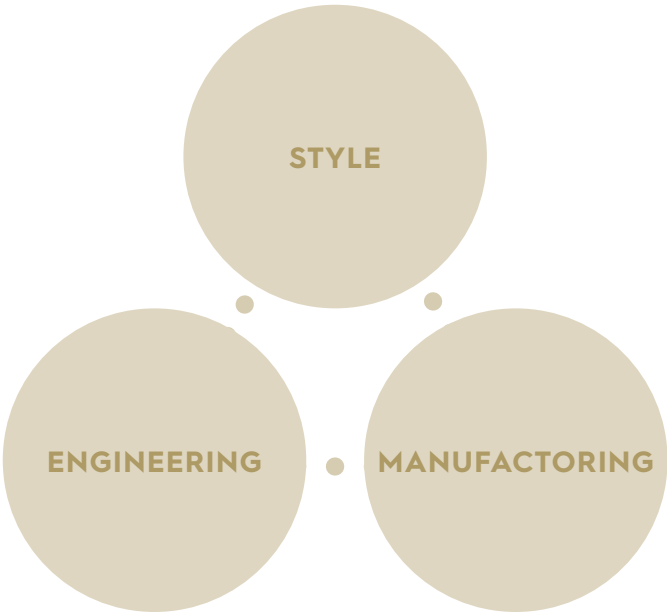


# Supply chain partnership

Manteco recognizes the great value of its supply chain, aiming to build solid professional relationships with its subcontractors and suppliers. The fabric, as a finished product, is obtainable thanks to the precious work of different operators, who need to work in a coordinated and cohesive way. And it is precisely from this basic idea that our MSystem arises.

## MSystem

The production of a fabric is based on 3 pillars:



In Manteco, the three pillars are considered of equal degree and equally important. Crafting a beautiful fabric requires the right idea, which is then properly engineered and made real in an artisanal way within an industrial process.

The craftsmanship within the industrial process is guaranteed by our Manteco System. The production of fabrics with high stylistic appeal would not be possible if there were no manual knowledge and skills given by the operators who daily work on Manteco fabrics. The soul of a fabric is determined by small operational details, which are learned in the field every day, and which make the difference.

The Manteco System is a set of more than 50 small and medium-sized companies, which daily work on behalf of Manteco. The relationship between Manteco and MSystem partners cannot be traced back to a simple customer-subcontractor relationship between, it is something deeper, while remaining a working relationship with his daily life. In Manteco there are eight expert technicians who daily go to the Manteco System subcontractors to check and support in the case of technical difficulties. Manteco and Manteco System are obliged to grow together.

The MSystem companies are located around 10 kilometers from the Manteco headquarters and in 2019 the relationship between the companies was regulated by signing a Charter of Commitments for the Sustainable Supply Chain.



### Methods for evaluating environmental criteria

In the Manteco System, Manteco requires the reference partners to share all data relating to their environmental performance, to control the risk of high environmental impacts of their production in terms of energy consumption, water consumption, waste production, use of resources and sustainability of raw materials. The System, organized starting from 2019, in the reporting year confirms its high level of qualification and is now overall certified according to the most well-known international standards of sustainable textile production. GRS, RWS, OCS and GOTS are some of the certifications obtained by the companies working in the Manteco System, achieved independently or through the involvement and support by Manteco in the certification phase. Furthermore, all the companies adhering to the Manteco System are subject to frequent audits by one or more customer brands. During the reporting year, Manteco also kept the qualification of raw material and processing suppliers updated with respect to their commitment to the elimination of toxic and harmful chemicals in production, according to the 4Sustainability® Chemical Management protocol, to which the company has adhered since 2015.

### Methods for evaluating social criteria

Manteco has always remained faithful to the tradition of Made in Italy, preferring the enhancement of local skills to relocation to countries where the low cost of labor is often associated with the risk that Human Rights and the guiding principles sanctioned by the International Organization of Labor are not respected. The Manteco production chain belongs to the textile district of Prato, with a community that directly employs more than 880 workers. By joining the Manteco System project, Manteco and its subcontractors are committed to building a model of sustainable industrial development, which also includes the social responsibility of their business.

### Supply chain loyalty

To obtain constant product quality, it is essential to have a loyal value chain. The supply of raw materials with which Manteco produces its yarns, the purchased yarns, and the chain of subcontractors that support the Manteco System in the production of Manteco fabrics, has an average incidence of over 80% of Manteco's costs. Manteco is a loyal and reliable customer in the purchases and payments of its suppliers and subcontractors, with excellent credit ratings. As part of a normal day-to-day dialectic, suppliers and subcontractors are and will always be an asset to Manteco.

### Local production

Manteco's business model is local. Not only Manteco does produce but it also sources locally. The supply of both pre- and post-consumer recycled wool with which Manteco creates M Wool® is completely carried out by local companies.

	2019	2020	2021	2022	2023
Number of companies	40	45	37	32	32

The decline in the number of suppliers is caused by the increasing loyalty of the supply chain, which enables the maintenance of a constant quality of input material.

The virgin wool from which ReviWool® is created is the other important source of supply for Manteco. The production of the fiber is obviously not Italian. Manteco sources from both Italian and foreign wool trading companies. The number of suppliers although decreased is to be considered constant as no purchases were made from marginal wool suppliers.

Number of companies	2019	2020	2021	2022	2023
Italian	8	7	9	6	4
Foreign	10	16	16	13	10

### Percentage of yarn purchases

On average, 80% of yarns purchased are produced in Europe.

2019	2020	2021	2022	2023	
46%	45%	40%	38%	20%	Local Production
25%	23%	35%	46%	36%	Italian Production
9%	18%	14%	10%	25%	European Production
20%	14%	11%	6%	19%	Extra-CEE Production



# Manteco Academy

Eco-design is one of the pillars of circular fashion.

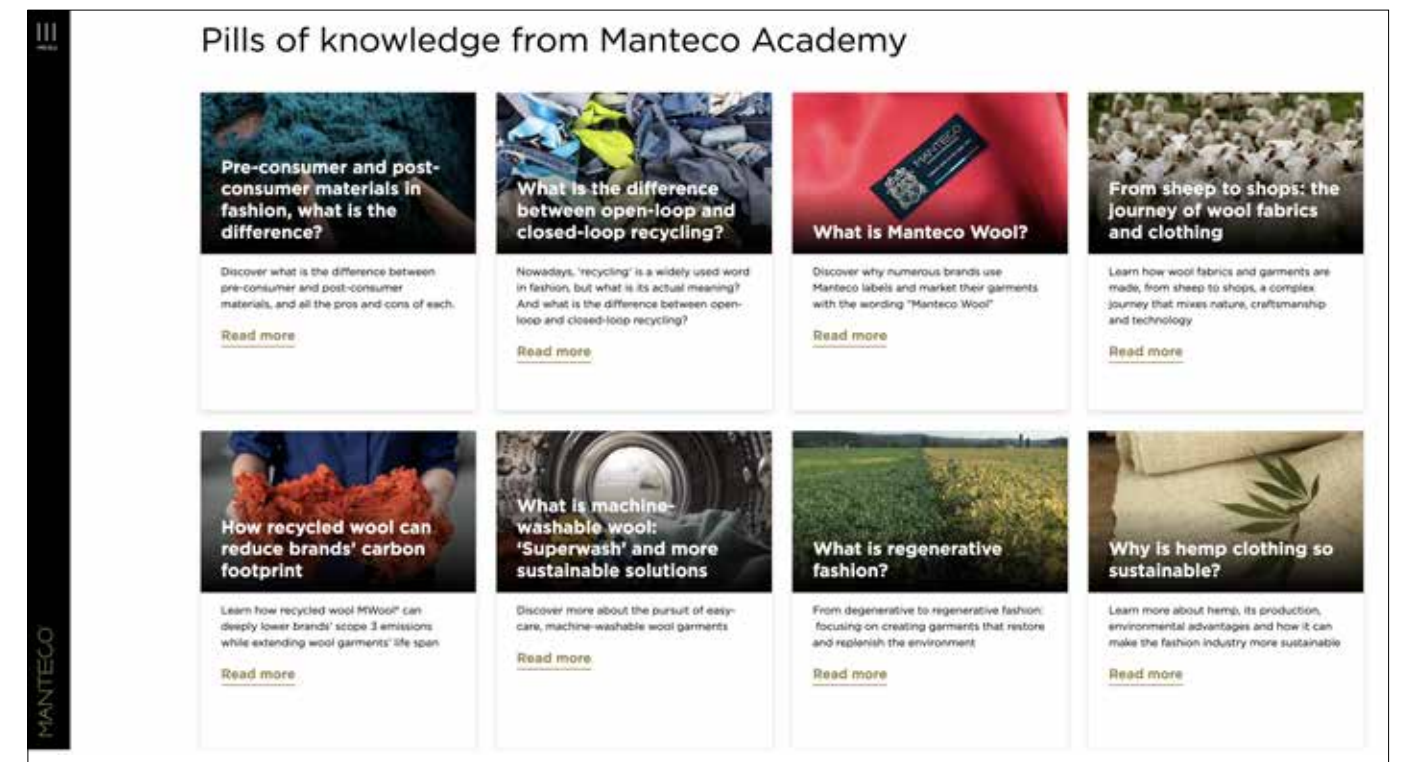
If garments are not designed and manufactured according to this philosophy and its guidelines, their end-of-life recycling will be impossible. The experience and knowledge we have gained over the decades is shared with students to pass on to future generations the precious values on which the fashion industry should be based on.

Since 2018, through the Manteco Academy project, Manteco® has made significant investments on training fashion students from all over the world, providing them with the knowledge to create recyclable garments and understand the circular economy. This project is a source of enormous satisfaction, because it succeeds in transferring useful skills to the new generations, who will go on to create future fashion collections.

[Link Manteco Accademy](#)

Manteco believes in a continuous and constant learning process over time, based on curiosity. For this reason, in 2021 a blog was created to sharing pills of knowledge focused on the intersection between the world of textiles and sustainability. All the blog posts are then simplified and turned into Carousels for Instagram, Facebook, and LinkedIn.

[Link Manteco blog](#)





In 2023, the following carousels were posted on our social media platform:



### Through the Mantecco Academy project we have made our commitment to The Sustainability Pledge from UNECE

To improve sustainable and ethical practices in the garment and footwear sector and support the transition to a less wasteful and more circular economy. The Sustainability Pledge is a series of policy recommendations, guidelines and standards that enable industry actors to authenticate their sustainability claims. Companies, governments, and other organisations can commit to implementing these UNECE-brokered solutions and declare their actions by signing up to [The Sustainability Pledge](#).





**In addition to education, we also provide our fabrics, or other textile materials, for fashion contests.**

Since 2021, we have established the “Manteco Sustainability Award”. It is a fashion contest for all those students who want to test their eco-design skills. Each student must present a capsule collection project and explain the reasons why it is in line with this design philosophy. Manteco evaluates all the projects by considering the following points: choice of raw materials, design and look. All of this by giving most importance to the recyclability and subsequent impact of the presented collection.



**In 2023, we achieved some great results:**

**25**

partner schools  
and universities  
we collaborated with

**470**

students welcomed  
for educational field  
trips in our company

**705**

fashion students  
educated on sustainable  
and circular fashion

**3**

Manteco Sustainability  
Awards arranged  
with students

\*But there is more, in 2023, we also arranged educational visits, webinars and in-person lessons with numerous brands, sharing with their employees our knowledge about sustainability and circular economy.





# Customer satisfaction

At Manteco, customer satisfaction is linked to supportive and collaborative activities such as:

- Co-development and production of exclusive fabrics;
- Co-branding activities with application of Manteco labels and tags on clients' garments;
- Marketing support both conceptually and graphically;
- Manteco Academy activities at companies, done with the same methods used for Universities and Fashion Schools;
- Technical-scientific collaborations on new projects

These activities contribute to the strengthening of our customer-supplier relationships and consequently to the improvement of the level of customer satisfaction and loyalty.

For Manteco, a customer is not just an organization to sell a product to, but a partner with whom to collaborate, to create value together.

# Philanthropy

Manteco carries out local and international philanthropic actions, below some examples:

- Fundraiser for Bimbi in ANT Foundation
- Fody Eco Social Fabrics ([link](#))
- FILE Fondazione Italiana ([link](#))
- Croce Rossa Italiana





## Art

The pursuit of art deriving from the passion for work and for the product by Manteco collaborators in compliance with their skills is evident from the stylistic and economic results of the company.

Manteco is a company that wants to leave its mark in future years, and art is one of the ways to express this will. It is not an action of appearance or patronage, but a profound belief that beauty and art will live over time. Manteco carefully selects the artistic collaborations to participate in, with the aim of helping the dissemination of art. Manteco continually tries to bring the art of work closer to visual art, as evidenced by the shade card of Pure® articles, which was curated by the art critic Antonio Grulli, who - with extreme competence - has managed to associate each color with a work of art of the Tuscan territory, from the Renaissance to the present day. ([manteco.com](https://manteco.com))

In 2023 Manteco has:

- Supplied the fabric for the Giangiacomo Rossetti exhibition  
"Through a thin wall" at the Dallas Power Station Museum ([link](#))
- Fabric sponsorship for permanent exhibition  
"Eccentrica" by Formafantasma at the Museo Pecci in Prato ([link](#))
- Sponsorship materials for the exhibition  
"Oltre Terra" by Formafantasma at the Oslo National Museum ([link](#))
- Project "Tempi Responsabili/Responsible Times"  
in collaboration with IUAV Venice University, study day on the culture of sustainability ([link](#));
- Support for the editorial project:  
"Imprese e imprenditori nel distretto pratese" Giuseppe Guanci's book

## Sport

In 2023 the Tennis Club Bisenzio played for the first time in its history the Serie A1 championship. Manteco supported this sporting adventure, becoming the team's main sponsor.







MANTECO<sup>®</sup>  
FOR PEOPLE



# Internal Training

In order to improve transversal skills, Manteco organizes systematic training for new hires on ESG criteria and how these are applied in the company’s sustainability policy. In addition, internal training for new projects is organised.

Manteco conducts health and safety training in the workplace according to legal requirements. All workers are trained according to their duties. In 2023, 57 workers performed 544 hours of mandatory training. Mandatory training was performed by 18 women and 39 men, the average hours of mandatory training for women was 168 for an average of 9,3 per employee, while the 39 men performed 376 hours for an average of 9,6 hours per employee.

In addition to the statutory compulsory training hours, 381 additional specific training hours were conducted.

Average number of training hours (voluntary and mandatory) per year per employee:

	2021	2022	2023
Total	3	10.7	13.8
Women	19	8.1 <sup>8</sup>	12.4
Men	45	12.0	14.2

<sup>8</sup>Reporting of training hours by gender is available from 2022.

# People First

The structure of Manteco’s board of directors has remained unchanged over the past few years. The table below shows details about the composition of the body itself.

	2021	2022	2023
Boards of Directors	3	3	3
By age group (x)			
x <30 years old	0	0	0
30 years old < x < 50 years old	2	2	2
x > 50 years old	1	1	1

In 2023, Manteco works with a number of employees of 76. The following table shows how employees are divided by age group, gender, and geographical area. Manteco’s employees range in age from 21 to 61 for an average age of 44 years.

	2021	2022	2023
Total employees	65	66	67
By age group (x)			
x <30 years old	12	10	10
30 years old < x < 50 years old	29	24	26
x > 50 years old	24	32	30
Average age	45 years	46 years	44 years
By gender			
Women	20	21	23
Men	45	45	44
By geographical area			
North Italy	1	1	1
Center Italy	64	65	66
South Italy	/	/	/
Europe	/	/	/



Associated with 2023 is a new-hire rate of 1 percent and a turnover rate of 7 percent.  
In 2023, the number of employees with permanent contracts is 52, while there are 15 temporary workers.

	2021	2022	2023
Total employees	65	66	67
By contract typology			
PERMANENT CONTRACT	51	56	52
Women	16	18	16
Men	35	38	36
FIXED-TERM CONTRACT	13	10	12
Women	4	3	3
Men	9	7	9
INTERSHIPS	1	0	3
Women	3	0	0
Men	7	0	3
FULL TIME	60	64	64
Women	16	19	19
Men	39	45	45
PART-TIME	6	2	3
Women	5	2	3
Men	1	0	0

	2021	2022	2023
Total employees	65	66	67
By work typology			
Administration, Commercial, Technical	41	42	42
Production, Stock and Logistic	24	24	25

# Managed emergencies

In line with the previous year, there were also no environmental emergencies in 2023 related to the production processes carried out by the company. In addition, no such reports were received from the processes to which Manteco entrusts its production.

The company has not identified any non-compliance with environmental laws and/or regulations.



# Corporate Welfare

As part of its MantEco for Planet® sustainability strategy, the company is committed to increasing corporate welfare activities geared toward employee well-being. Manteco sees people as the heart of the company. The company's goal is to equip itself with useful tools to continuously intercept staff needs and improve teamwork, process effectiveness and staff satisfaction.

In order to achieve this commitment, Manteco has developed a specific welfare plan 2020-2025 in which time-frames and methods have been defined for verifying the effectiveness of the planned loyalty-building and business climate improvement actions. The welfare plan is applied indiscriminately to every type of employee.

All employees of Manteco are covered by a collective agreement in accordance with the provisions of employment legislation. Specifically, all employees (100%) are represented by the Textile and Apparel CCNL. As per the CCNL, all employees are eligible for parental leave. In 2023, no employees took it.

No employee in the past three years has taken parental leave.

From the perspective of remuneration and gender pay gap, there are no substantial differences in different salaries between men and women.

This year, we introduced the delightful "Zero-Kilometer Weekly Market" initiative. Every week during lunch break, Azienda Agricola La Ligna sets up a sales counter offering food products grown and produced by the company.

Both Manteco staff and visitors have warmly welcomed this initiative, enjoying a wonderful opportunity to foster community and promote sustainable, local food choices.







# Health & Safety

Manteco identifies health and safety-related risks through an external RSPP appointed by the BoD. Safety risk management is the direct responsibility of the company, while health-related risks are reported to the competent physician appointed by the BoD. The RSPP manager conducts semi-annual safety inspections while employee health-related inspections are conducted annually.

In line with the statistics on the previous report, there were no work-related injuries in 2022 and therefore zero days of absence from work due to work-related injuries or illnesses. In addition, there are no employees in the company involved in work activities with a high rate or risk of specific diseases. In 2022, 117,748 hours were worked.

Parental Leave			
	2021	2022	2023
TOTAL EMPLOYEES WHO HAVE BENEFITED	0	0	0
Women	0	0	0
Men	0	0	0
BACK TO WORK EMPLOYEES AFTER PARENTAL LEAVE	0	0	0
Women	0	0	0
Men	0	0	0
STILL EMPLOYED 12 MONTHS LATER BACK TO WORK	0	0	0
Women	0	0	0
Men	0	0	0
RATE OF RETURN TO WORK	0	0	0
Occupational illnesses - employees			
Number of deaths	0	0	0
Number of injuries with serious consequences	0	0	0
Number of recordable work accidents	0	0	0
Occupational illnesses - subcontracted workers			
Number of deaths	0	0	0
Number of injuries with serious consequences	0	0	0
Number of recordable work accidents	0	0	0





# Fight against discrimination

Manteco’s Charter of Values for Sustainability and the Charter of Commitments for the Sustainable Supply Chain signed as part of the Manteco System project sanction the prohibition of discriminatory behavior. Manteco and its supply chain have undertaken not to practice any form of discrimination in the recruitment and management of personnel (including salary treatments, career advancements, dismissals, retirements) based on race, religion, age, social origins, gender, political opinions or any other personal condition not related to experience or ability in the performance of duties.

Manteco does not tolerate discriminatory behavior throughout the entire human resource management process starting from the selection phase, during work activity and in the event of resignations that are freely presented by the employee. In line with this approach, also in 2023 the company did not receive any reports of incidents related to discriminatory practices.

# Membership

Manteco is enrolled in:

- **Confindustria Toscana Nord**
- **Sistema Moda Italia Federazione Tessile e Moda**
- **CID Consorzio Implementazione Detox**
- **Pratotrade**
- **R-Invest**



# GRI content index

Statement of use	Manteco S.p.a. has reported in accordance with the GRI Standards for the period January 1, 2022 - December 31, 2022
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	No applicable GRI Sector Standards

GRI Standard	Disclosure	Location (page number)	Notes/Omission
GENERAL DISCLOSURES			
GRI 2: General Disclosures 2021	2-1 Organizational detail	7-9, 13	
	2-2 Entities included in the organization's sustainability reporting	13	This report is about Manteco S.p.A. as presented in the financial statements of the company
	2-3 Reporting period, frequency and contact point		This report presents the sustainability performance of the company between January 1 and December 31, 2023. Manteco S.p.A. reports annually. In case of questions about the sustainability work, please contact <a href="mailto:giuseppe.picerno@manteco.com">giuseppe.picerno@manteco.com</a>
	2-4 Restatements of information		
	2-5 External assurance		This report has not been assured
	2-6 Activities, value chain and other business relationships	9-15, 36-39, 97-99	
	2-7 Employees	113-115	

	2-8 Workers who are not employees	93-115	
	2-9 Governance structure and composition	22	
	2-10 Nomination and selection of the highest governance body	22	
	2-11 Chair of the highest governance body	22	
	2-12 Role of the highest governance body in overseeing the management of impacts	24	
	2-13 Delegation of responsibility for managing impacts	24	
	2-14 Role of the highest governance body in sustainability reporting	24	
	2-15 Conflicts of interest	22	
	2-16 Communication of critical concerns	22	
	2-17 Collective knowledge of the highest governance body	24	
	2-18 Evaluation of the performance of the highest governance body	22	
	2-19 Remuneration policies	24	
	2-20 Process to determine remuneration	24	



	2-21 Annual total compensation ratio		Omitted due to confidentiality
	2-22 Statement on sustainable development strategy	7	
	2-23 Policy commitments	7-9	
	2-24 Embedding policy commitments	7-9, 29, 97-99	
	2-25 Processes to remediate negative impacts		The governance structure and the managerial control system allow the company to monitor and remediate negative impact
	2-26 Mechanisms for seeking advice and raising concerns	22	Whistleblowing procedure
	2-27 Compliance with laws and regulations		"There were no significant instances of non-compliance with laws and regulations and no fines were paid during the reporting period."
	2-28 Membership associations	121	
	2-29 Approach to stakeholder engagement	29	
	2-30 Collective bargaining agreements	116	

MATERIAL TOPICS			
GRI 3: Material Topics 2021	3-1 Process to determine material topics	29-30	
	3-2 List of material topics	29-30	
CLIMATE CHANGE			
GRI 3: Material Topics 2021	3-3 Management of material topics	72-75, 77	
GRI 302: Energy 2016	302-1 Energy consumption within the organization	72-77	
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	72-81	
	305-2 Energy indirect (Scope 2) GHG emissions	72-81	
	305-5 Reduction of GHG emissions	43-49	
CIRCULARITY			
GRI 3: Material Topics 2021	3-3 Management of material topics	55-57	
GRI 301: Materials 2016	301-1 Materials used by weight or volume	81-83	
	301-2 Recycled input materials used	81	
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	78	
	306-2 Management of significant waste-related impacts	78	
	306-3 Waste generated	78	



ANIMAL WELFARE			
GRI 3: Material Topics 2021	3-3 Management of material topics	53	
RESPONSIBLE CHEMICAL MANAGEMENT			
GRI 3: Material Topics 2021	3-3 Management of material topics	69	
RAW MATERIALS			
GRI 302: Energy 2016	3-3 Management of material topics	81	
PACKAGING			
GRI 302: Energy 2016	3-3 Management of material topics	83	
DIGITAL TRANSFORMATION			
GRI 302: Energy 2016	3-3 Management of material topics	87	
TRACEABILITY AND TRANSPARENCY			
GRI 3: Material Topics 2021	3-3 Management of material topics	93-95	
LOCAL PRODUCTION			
GRI 3: Material Topics 2021	3-3 Management of material topics	93	
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	97-99	
CUSTOMER SATISFACTION			
GRI 3: Material Topics 2021	3-3 Management of material topics	106	
SUPPORT TO THE TERRITORY			
GRI 3: Material Topics 2021	3-3 Management of material topics	101-105, 109	

SKILLS DEVELOPMENT AND TALENT CULTIVATION			
GRI 3: Material Topics 2021	3-3 Management of material topics	101-105, 113,116	
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	113,115	
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	115-116	
	401-3 Parental leave	115-116	
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	112	
HEALTH AND SAFETY			
GRI 3: Material Topics 2021	3-3 Management of material topics	113, 115	
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	116, 119	
	403-2 Hazard identification, risk assessment, and incident investigation	116, 119	
	403-3 Occupational health services	116, 119	
	403-4 Worker participation, consultation, and communication on occupational health and safety	116, 119	
	403-5 Worker training on occupational health and safety	116, 119	
	403-6 Promotion of worker health	116, 119	



	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	114, 115	
	403-9 Work-related injuries	114, 115	
	403-10 Work-related ill health	114, 115	
DIVERSITY AND EQUAL OPPORTUNITY			
GRI 3: Material Topics 2021	3-3 Management of material topics	121	
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	113, 115	
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	121	

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