

# Monitor for Circular Fashion

REPORT 2021



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REPORT 2021

SDA Bocconi  
SCHOOL OF MANAGEMENT  

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SUSTAINABILITY LAB  
MONITOR FOR CIRCULAR FASHION

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# Introducing the Monitor for Circular Fashion

## Who we are

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traceability and transparency as enablers  
of sustainability and circularity





# Who we are

The SDA Bocconi School of Management Sustainability Lab Monitor for Circular Fashion is a:

- 1) multi-year research project
- 2) multistakeholder community

The Monitor for Circular Fashion, powered by Enel X, is willing to disseminate the best practices of circular fashion and promote technical, managerial and scientific skills especially those that contribute to the transition towards circular business models.

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## Partner companies

### Ingredient brands

Candiani Denim  
ICA Yarns  
Manteco  
RadiciGroup  
Vitale Barberis Canonico  
Vibram

### Brands & Retailers

Oscalito  
OVS  
Save The Duck  
Vivienne Westwood

### Service Providers

Dedagroup Stealth  
Intesa (IBM Group)  
PLM Impianti  
Temera

### KPIs Committee

Bip  
PwC

### Technical Partners

Eco-Age  
Visualmade



# 1.1 Monitor for Circular Fashion

The Monitor for Circular Fashion, part of the SDA Bocconi School of Management Sustainability Lab, is a multistakeholder scientific and technological community comprising of leading companies in the Italian fashion industry and

players in its supply chain. The Monitor for Circular Fashion, powered by Enel X, includes several activities (see Figure 1), and disseminates the best practices of circular fashion, promotes technical, managerial and scientific skills especially

those that contribute to the transition towards circular business models.

[www.sdabocconi.it/circularfashion](http://www.sdabocconi.it/circularfashion)

Figure 1  
Activities of the Monitor for Circular Fashion 2021.

EDUCATIONAL SESSIONS	RESEARCH	CIRCULAR ECONOMY REPORT*	PILOT PROJECT "CIRCULAR PRODUCT CHALLENGE"	CIRCULAR FASHION MANIFESTO
Training and brainstorming  Methodological sessions on circular fashion business models  Networking	SDA Bocconi survey to identify the industry-specific KPIs  SDA Bocconi in-depth one to one interviews	Corporate and Energy site Circular assessment  Highlight the main gaps and creation of a tailored solution roadmap to improve the circularity levels  * Individual report prepared by Enel X	Teamwork along the supply chain to design a "circular product"  Guidelines and technical support in the application of the circular principles to design the "circular product" offer	Commitment to the UNECE Call to Action "Sustainability Pledge" on transparency and traceability  Participation to multi-stakeholder initiatives (UNI, etc...)

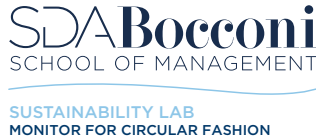
## Who we are

### SDA BOCCONI SCHOOL OF MANAGEMENT

SDA Bocconi School of Management has been a leading institution in management training for 50 years. The school's mission is to help individuals, companies and institutions grow by promoting managerial culture, knowledge and innovation. SDA Bocconi is among the leading Business Schools in Europe and is among the few to have gained the triple accreditation - EQUIS,

AMBA and AACSB - which puts it in the élite of Business Schools worldwide. #5 European B-School Financial Times Rankings 2020.

SDA Bocconi Sustainability Lab is a multidisciplinary think tank aiming at developing and spreading relevant and innovative research to support enterprises and financial institutions, policy makers and non-profit organizations in their path towards sustainability.



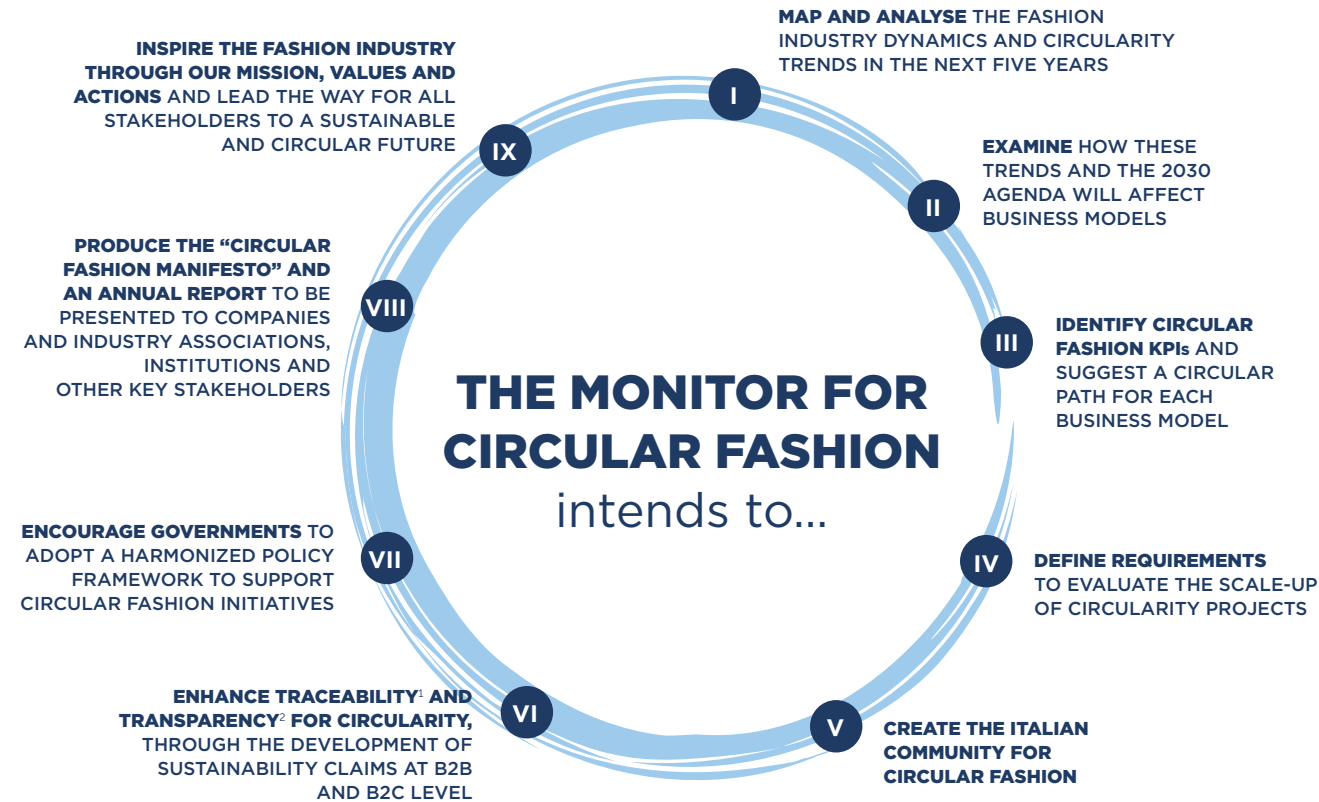
### POWERED BY ENEL X

Enel X is Enel Group's global business line offering innovative solutions that support energy transformation. With a strategy geared towards digitalization, sustainability and innovation, Enel X of-

fers a closely interconnected ecosystem of solutions, which turn energy into new opportunities in various sectors: electric mobility, energy efficiency, artificial intelligence, energy consulting and financial services. This approach focuses on sustainability and circular economy principles in order to provide people, institutions and companies with an alternative

model that respects the environment. In this perspective, Enel X acts as a partner in the circular transition of its stakeholders operating in various industrial sectors, with a special interest in the fashion one, which represents a key sector in the circular transition process. The first step in this context was in 2018, with the first pilot case carried out with ES'GIVIEN, an

Italian clothing company that for three years has been travelling with Enel X on a circular acceleration path.



<sup>1</sup>Traceability is understood as "the ability to trace the history, application or location of an object" in a supply chain. (Source: ISO 9001: 2015, "Quality Management Systems Requirements"). It is the ability to "identify and trace the history, application, location and distribution of products, parts and materials to ensure the reliability of sustainability claims in the areas of human rights, labour (including health and safety), the environment and anti-corruption" (United Nations Global Compact Office (2014), "A Guide to Traceability A Practical Approach to Advance Sustainability in Global Supply Chains") and "the process by which enterprises track materials and products and the conditions in which they were produced through the supply chain" (OECD (2018), "Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector").

<sup>2</sup>Transparency relates directly to relevant information been made available to all elements of the value chain in a standardized way, which allows common understanding, accessibility, clarity, and comparison (European Commission (2017), "A Background Analysis on Transparency and Traceability in the Garment Value Chain").

# Partner companies



**Candiani Denim** as industry pioneers – being some of the first to utilize only the finest, responsibly sourced cotton, fibers and dyes, and clean technologies to save water, energy, and replace harmful chemicals – sustainable production is at the heart of Candiani. The integration of circularity into their production processes and as a fundamental part their product design is the natural evolution of their approach to producing denim in a better way. Their vision for the denim of the future is one that is both regenerated and regenerating. From fiber to finish they aim to make 100% compostable denim with a net positive impact at every stage in its lifecycle.



**Dedagroup Stealth** helps Fashion and Luxury companies grow and develop local and global markets. Over the last 30 years, its expertise and attitude have won it an enviable stable of iconic clients. As a leader in its market, Dedagroup Stealth aims to generate positive change for people and our planet, releasing technology solutions supporting sustainable business models and circular fashion. Dedagroup Stealth is a Deda company, one of the most crucial players in the “Made in Italy” Information Technology industry.



**Ica Yarns** (I Cotoni di Albini S.p.A.) was born in 2012 from Albini Group’s expertise in the selection of raw materials and spinning know-how. Its intensive efforts are focused on producing and selling high-quality and ethically grown yarns which are scientifically traced and certified. ICA Yarns strategy is based on a sustainable development plan, from extractive to regenerative economic model: strong partnerships with growers, direct control of the supply chain, transparency, traceability are its strategies to reduce carbon footprint and protect working conditions.



**Intesa** is an IBM Company focused on the design and development of solutions for end-to-end digitization of business processes. Since 1980, the company has taken into account the impact that its digital services have on the environment and people’s work, minimizing it, and contributing to developing sustainable business processes, without waste. This is the way Intesa designs digital solutions that bring measurable benefits for a better world.



**Manteco S.p.A.** is a leading textile company for sustainability and high-quality fabrics since 1943. It is fully committed to circular fashion and has developed numerous projects in order to achieve it: a zero-waste system to recover all the scraps coming from production phases, a sustainable design philosophy to create recyclable fabrics, projects to take back and recycle the offcuts produced during garment making



or unsold knits. Manteco S.p.A. is adhering to the principles of the UN Agenda 2030 for sustainable development through its roadmap to sustainability MantEco for Planet® and applies science-based LCA studies on its recycled wool fabrics.

**Oscalito** has been producing since 1936 quality underwear and knitwear for men and women, using an ethically responsible and sustainable production process. Oscalito commitment to social and environmental sustainability is seen in seven main key aspects: all their products are 1) 100% Made in Italy; 2) made of natural (or of natural origin) fibers; 3) made with raw materials with environmental or health protection certifications (OEKO TEX, GOTS); 4) the output of a short supply chain, using only Italian or European suppliers of raw materials; 5) high quality items; 6) produced with respect for workers; 7) made using renewable energy and sustainable packaging.



**OVS S.p.A.** is leading group in Italy in the clothing market for the woman, men and children segments. The OVS brand has been able to develop a bond of trust with its customers over time, achieving brand awareness on the Italian market of 94% in 2020. OVS business has the potential to have a major positive impact along the supply chain. The company wants sustainable fashion to become the new normal: OVS does its part to address global challenges, with the priority to reduce the impact of the materials used, to promote a circular economy system leveraging transparency as a key to change.



**PLM Impianti** is a leading company in the design and production of machinery and automation applied to inspection, cutting, handling and packing in the textile, automotive, denim, technical and non-woven sectors. Since 1960, the company has contributed to the productivity and sustainability of their customers through solutions designed specifically to optimize and rationalize processes, increase the first-choice product and reduce consumption, costs and waste. Sustainability is a core value in the day to day ongoings of the company, in the production processes and at the basis of their machinery.



**RadiciGroup**, a leading chemical multinational group, works everyday to make circularity its business model. The Group optimizes the use of materials while fine-tuning processes, reducing waste, promoting recyclability from the earliest product design phases. RadiciGroup supports recycling whenever it is the best environmental solution. It is always looking for low-impact solutions in terms of natural resources and energy, such as making green power the first choice. RadiciGroup relies on certified management systems for Safety, Environment and Energy to keep companies in line with the highest sustainability standards.



**Save The Duck**, the 100% animal free B Corp certified outerwear brand, takes care of the environment and all its inhabitants, promoting a transparent business model that is attentive to the responsible management of resources. Sustainability is a path that has no point of arrival, it requires commitment and dedication. Save The Duck works to ensure that the future of the next generations is not compromised by its work in the present.

**temera**

**Temera** is the leading company providing IoT solutions dedicated to Fashion, Luxury & Retail industry. Temera gives a 'digital voice' to products through the use of unique identifiers, providing an end-to-end traceability through the value chain. Standing out as innovator and visionary, Temera represents a center of excellence in delivering digital transformation projects that bring high impact in terms of transparency and sustainability storytelling.



**Vibram** Group manufactures and licenses the production of high performance rubber soles for footwear. Vibram aims to make the best soles in the world and is working towards minimizing its environmental and social impact without compromising its quality. Vibram The Sustainable Way strategy focuses on Vibram Values: People, Quality, Durability, Innovation, Inspiration, Test and No Waste. The company measures progress and sets goals in all impact areas in order to grow responsibly and continually decrease its impact on the planet with the ambition of inspiring all stakeholders to continuous improvement.

**VITALE 1663  
BARBERIS  
CANONICO**

**Vitale Barberis Canonico** has been creating prestigious 'Made in Italy' textiles for the clothing industry in the historical factory in Pratrivero, in the heart of Piedmont, for more than 350 years, operating in a harmonious way with the environment and the surroundings. Vitale Barberis Canonico is the largest global exporter with more than 400 employees, 40 agents throughout the world and two state-of-the-art factories in the Biella region of Italy. Heritage, Innovation and Sustainability are the key words of the company philosophy. The company annually publishes its Sustainability Report to trace the results achieved and to set challenging goals.



**Vivienne Westwood Srl** is part of one of the last independent global fashion house that designs, develops, manufactures, and sells luxury goods. In the last ten years, the Italian business unit had to rethink the production paradigm of the sector, to align it with a model sensitive to environmental and social issues. Social, environmental and circularity goals drive the company in the selection of raw materials, of manufacturing suppliers and motivate Vivienne Westwood to implement innovative processes until downstream. The company is willing to progressively map and trace the entire supply chain, monitoring the lifecycle of the products manufactured, mitigating the environmental and social risks.



## KPIs Committee

**Bip** is an international consulting company born in 2003 in Italy, and now based in 12 countries, with 20 offices (London, Rio de Janeiro, New York, Abu Dhabi, etc.) and more than 3,500 employees globally. Bip supports large and medium companies to adopt sustainable and circular transformation principles into their own organization and processes, improving corporate, energy & environmental, social and financial sustainability. Bip supports its clients, on the fashion and luxury sector, with actions aimed at implementing sustainable approaches to supply and production by measuring the consequent level of sustainability achieved.



**PwC** purpose is "solve important problems and build trust in society" and perhaps nowhere do we have greater opportunities to fulfill this purpose than in helping our clients address sustainability issues. PwC looks at sustainability as a key element for the development of services and guides organizations on a virtuous path for themselves and society, tracing sustainable paths, together.  
#responsiblejourney

## Technical partners



**Eco-Age** is a specialist sustainability and communications agency creating evidence-led sustainability narratives and programmes of change which resonate with both consumers and industry insiders. Over the last decade they have honed specific expertise in supply-chains, textiles, impact measurement, internal and external communications, PR and event-planning.

**visualmade**

**Visualmade**, corporate communication agency, develops complex identity and information systems to meet specific communication needs, on paper, in the web, and in architectural spaces. During last 15 years Visualmade has been more and more developing branding and communication strategies and systems, focusing on sustainability as a corporate value.



## 1.2 Acknowledgements

The Monitor for Circular Fashion Report 2021 has been written by Francesca Romana Rinaldi with the essential support of Claudia di Bernardino in drafting the legal section of the report, Valentina Perissinotto in drafting the desk research section, Aristeia Saputo, in drafting the methodology sections, and the Enel X team in drafting the specific sections dedicated to the Corporate and Energy KPIs.

This Report is the result of great community collaboration. We would like to extend our gratitude to Francesco Perrini, Director of the SDA Bocconi Sustainability Lab for hosting the Monitor for Circular Fashion and Paola Cillo, Director Claudio Dematté Research Division SDA Bocconi School of Management; the Enel X team, specifically Nicola Tagliafierro, Head of Sustainability Enel X, Biagio Olivito, Circular Economy Advisor Enel X, Silvia Arcieri, Sustainable Product Development Enel X.

In addition to Claudia di Bernardino, the Legal Advisor of the Monitor for Circular Fashion, we would like to thank Rossella Ravagli, Strategic Advisor and Daniele Denegri, Community Advisor.

Special thanks for having participated to the whole project to Gurpreet Kaur Talwar, MAFED SDA Bocconi Alumna, for all the suggestions during the

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Many thanks for the immense contribution to our 16 Partners of the Monitor for Circular Fashion, and the KPIs Committee composed by Danilo Perucci, Elvira Maniscalco and Giorgia Incarico from **Bip**; Erika Andreetta, Gaia Giussani and Daniela Ioana Popa from **PwC**.

Many thanks to all the industry Partners of the Monitor for Circular Fashion listed below in alphabetical order, who actively participated in the meetings and provided precious inputs for the final report.

Ingredient brands: Giorgia Chiarissimi from **I Cotoni di Albini**; Danielle Arzaga, Simon Giuliani and Alberto Candiani from **Candiani Denim**; Marco Mantellassi, Giuseppe Picerno, Mattia Trovato and Luca Querci from **Manteco**; Marco Guazzoni, Roberta D'Isita, Elizabeth Mamo from **Vibram**; Chiara Ferraris and Mariateresa Betti from **RadiciGroup**; Lucia Bianchi Maiocchi from **Vitale Barberis Canonico**.

Brands & retailers: Dario Casalini and Andrea Alessio from **Oscalito**; Simone Colombo and Irene Sollazzo from **OVS**; Silvia Mazzanti, Eleonora

Cecchetti and Nicolas Bargi from **Save The Duck**; Isabella Tonelli, Giorgio Ravasio and Raffaele Russo from **Vivienne Westwood S.p.A.**

Service providers: Adolfo Pastorelli, Silvia Santato and Luca Tonello from **Dedagroup Stealth**; Pietro Lanza, Nadia Rendina, Luca Spina, Cristina Cairo from **Intesa (IBM Group)**; Luca Ravasio and Alice Carminati from **PLM Impianti**; Arcangelo D'Onofrio and Irene Molinelli from **Temera**.

Lastly, a token of appreciation to all the Experts that provided precious inputs during the brainstorming sessions in the first year of the Monitor for Circular Fashion, especially (i.e. the list is not comprehensive): Matteo Ward from WRAD, Enrica Arena from Orange Fiber, Carlo Covini from Lenzing, Giusy Bettoni from C.L.A.S.S., Francesca Rulli from Process Factory, Elisa Gavazza, Liuba Napoli, Francesco Minghini, the greenchic team, Karin Bolin from Humana People to People Italia Onlus, Stefano Bassi from Patagonia, James Carnahan and Albert Llorc from Archroma, Letizia Rigazzi and Eric Ezechieli from Nativa, Stefano Galassi from Startupbootcamp, Annie Cyr from Tengiva, George Harrington from GRI, Carolina Gomez, Giada Necci, Linda Vezzani, Francesca Poggiali from GS1, Maria Teresa Pisani from UNECE.

The **Circular Fashion Manifesto** has been presented to the United Nations Economic Commission for Europe (UNECE). It is SDA Bocconi Sustainability Lab's response to the UNECE's "Sustainability Pledge", which comprises a dedicated toolbox of policy recommendations, implementation guidelines, standards plus a Call to Action. The UNECE invites all the players in the garment and footwear industry to implement this toolbox and take practical action for **traceability and transparency** for improved sustainability, in line with the **2030 Agenda for Sustainable Development**.

# 1.3 Circular fashion Manifesto

## TRACEABILITY AND TRANSPARENCY AS ENABLERS OF SUSTAINABILITY AND CIRCULARITY

### UNECE “Sustainability Pledge”

The Sustainability Pledge (see Figure 2) is a result of the UNECE project ‘Enhancing Transparency and Traceability of Sustainable Value Chains in Garment and Footwear’ that is being implemented with the UN/CEFACT, in collaboration with the International Trade Centre (ITC) and with funding from the European Union. The goal of the project is to establish a mechanism that enables governments, industry partners, consumers and all other relevant stakeholders to make risk-informed decisions and achieve accountability for sustainability claims.

Asserting and verifying sustainability claims in the garment and footwear sector are set to become easier thanks to a toolkit of policy recommendations, implementation guidelines and standards endorsed by UNECE member States that provide traceability and transparency solutions for tracking any garment or item of footwear from raw components to point of purchase.

The UNECE toolkit delivers solutions for generating an immutable record of



Figure 2  
The UNECE Sustainability Pledge.  
<http://thesustainabilitypledge.org>

provenance and composition for any item of clothing or pair of shoes. Armed with such information, consumers, regulators and companies themselves can check claims around sustainability and ethical production.

Greater traceability and transparency can also contribute to efforts towards building a circular economy, as prioritised by the European Union. When precise information on product composition is made available, goods can be more easily recycled keeping materials in use and practices that generate waste, pollution or damage the natural environment cannot be hidden from regulators.

The following Pledge is a short version of the Circular Fashion Manifesto available on the website [www.sdabocconi.it/circularfashion](http://www.sdabocconi.it/circularfashion), the commitment officially presented to UNECE by the companies of the Monitor for Circular Fashion. It answers to the UNECE “Sustainability Pledge” inviting all actors in the garment and footwear industry to take action for traceability and transparency in order to accelerate the sustainability and circularity of value chains, in line with the United Nations 2030 Agenda for Sustainable Development. The initiative aims to establish a mechanism to support the uptake of measures in the UNECE.

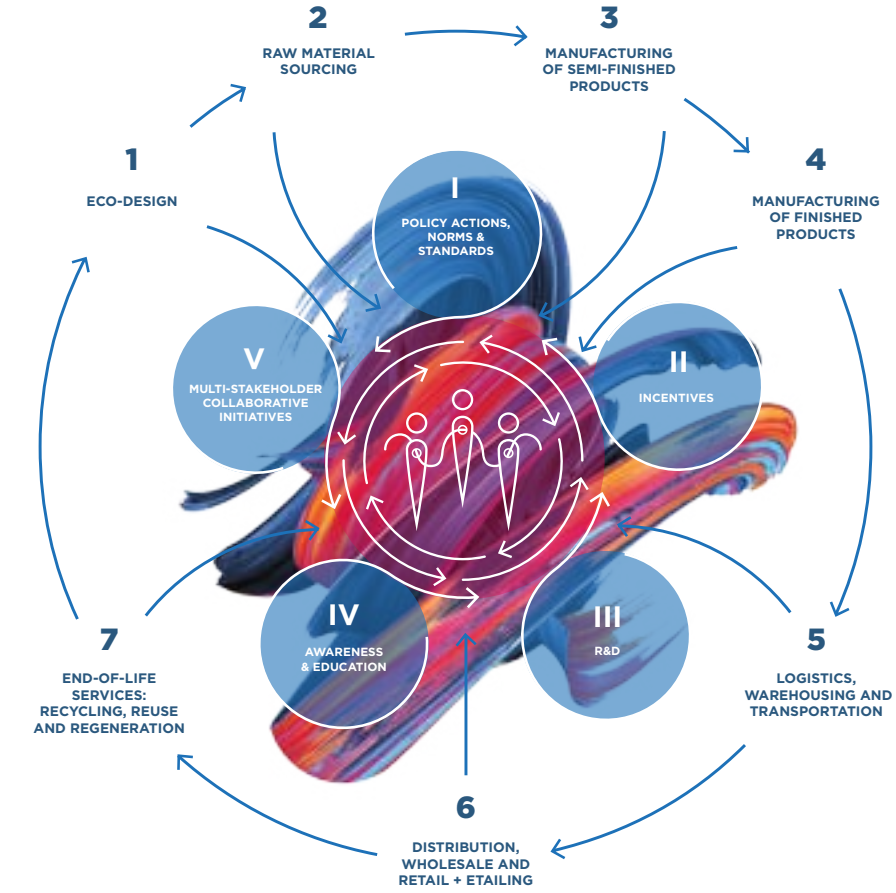
Figure 3  
The Monitor for Circular Fashion Manifesto.

### THE PLEDGE

The companies participating in “The Monitor for Circular Fashion” commit to:

- **gather information** required to positively boost progress towards sustainability and more importantly reduce their negative impact on our planet;
- **enhance circularity** and sustainability of value chains through transparency and traceability;
- **implement circular business processes** along their value chains;

- **adopt common indicators** to measure progress on circularity in their value chains and report the results;
- **encourage high quality waste management**;
- **raise public awareness** and educate all relevant stakeholders on the positive impacts of sustainable and circular production and consumption;
- **exchange experiences and cooperate** with other multi-stakeholder circular initiatives.





# Fashion industry research and post-Covid view

## Reshaping fashion industry perspectives

- 2.1 Impacts of Covid-19 on the fashion value chains
- 2.2 Current global scenario on circular fashion
- 2.3 The legal framework to boost circularity in fashion

# 2





# Reshaping fashion industry perspective

COVID-19 pandemic has caused major economic, social and environmental consequences, including a significant increase in textile waste production.

The transition from a linear to a circular economy will play a significant role in meeting the Sustainable Development Goals (SDGs) part of the 2030 Agenda.

Some barriers are limiting the transformational change towards circularity.

The cradle-to-grave approach is still dominant.

The Monitor for Circular Fashion is founded on the belief that the following factors will be instrumental in bringing about a transformational change towards sustainability and circularity in the fashion industry:



Enhanced dialogue among policy makers, companies, institutions, final users, associations, NGOs and other relevant stakeholders.



Regulations and incentives that address the crucial requirements for the implementation of a circular approach.



Awareness and education programs on sustainability and circularity for all stakeholders.



## 2.1 Impacts of Covid-19 on the fashion value chains

**COVID-19 pandemic has caused major economic, social and environmental consequences, including a significant increase in textile waste production.**

UNEP<sup>3</sup> points out that the main impacts across the textile value chains include: delays in raw material delivery and consequent increase in prices; disruptions in manufacturing processes for fibers production; payment delays and orders cancellations. These have resulted in financial difficulties for manufacturers; collapse in demand from final users and increased e-commerce sales; lack in social security for workers losing their jobs; increased textile pre-consumer and post-consumer waste caused by increased demand in personal protective equipment, overproduction, cancelled orders. McKinsey & Company predicts that the pandemic may bring 60 billion pieces of fashion products to be unsold in 2021<sup>4</sup>.

**The pandemic has highlighted the fragility of the industry**, especially on the value chain activities outsourced in countries with poor or no legal framework in support of workers.

It affected trade flows in general, with severe consequences on workers cooperatives, artisan groups, local crafts-based communities, home-based workers, agricultural workers and farmers<sup>5</sup>.

**The pandemic also put in gear the emergence of more responsible consumers desiring more sustainable and circular products.**

The PwC consumer survey of over 8,700 consumers reveals that one year after COVID-19 partially shut down many of the world's economies, consumers have developed new habits that are likely to continue even after the pandemic: "many consumer behaviour trends have accelerated during the pandemic" and the radical changes in "how consumers shop, travel, work, engage with brands and live their lives could have long-lasting implications for consumer market industries"<sup>6</sup>.

Another recent consumer survey of over 2,000 adults indicates that over half of respondents had already made lifestyle changes to reduce their environmental impact and more than 60% report going out of their way to recycle and purchase products in environmentally friendly packaging<sup>7</sup>.

**COVID-19 pandemic has caused major economic, social and environmental consequences, including a significant increase in textile waste production.**

<sup>3</sup> UNEP (2020), "Sustainability and Circularity in the Textile Value Chain. Global Stocktaking", pp. 40-43.

<sup>4</sup> Business of Fashion, McKinsey & Company (2020), "The State of Fashion 2020: Coronavirus Update".

<sup>5</sup> Fashion Revolution (2020), "The impact of COVID-19 on the people who make our clothes".

<sup>6</sup> PwC (2021), "PwC's March 2021 Global Consumer Insights Pulse Survey" [pwc.com/consumerinsights](https://www.pwc.com/consumerinsights).

<sup>7</sup> McKinsey & Company (2020) "Survey: Consumer sentiment on sustainability in fashion".

## 2.2 Current global scenario on circular fashion

**The transition from a linear to a circular economy will play a significant role in meeting the Sustainable Development Goals (SDGs) part of the 2030 Agenda.**

Recent studies show the increasing commitment of the industry players towards circular business models, with many of them signatories to one or more industry-wide or global commitment.

However, the state of play suggests that circularity strategies are on the rise, but yet to be realized.

Global Fashion Agenda 2021 confirms that barriers related to "regulatory, logistical, technical and economic

complexities regarding textile collection, recycling and the quality and safety of input materials"<sup>8</sup> are limiting the transformational change towards circularity.

As a matter of fact, while most of the companies have a circularity strategy in place, a small part already invests in circularity opportunities critical to closing the loop<sup>9</sup>.

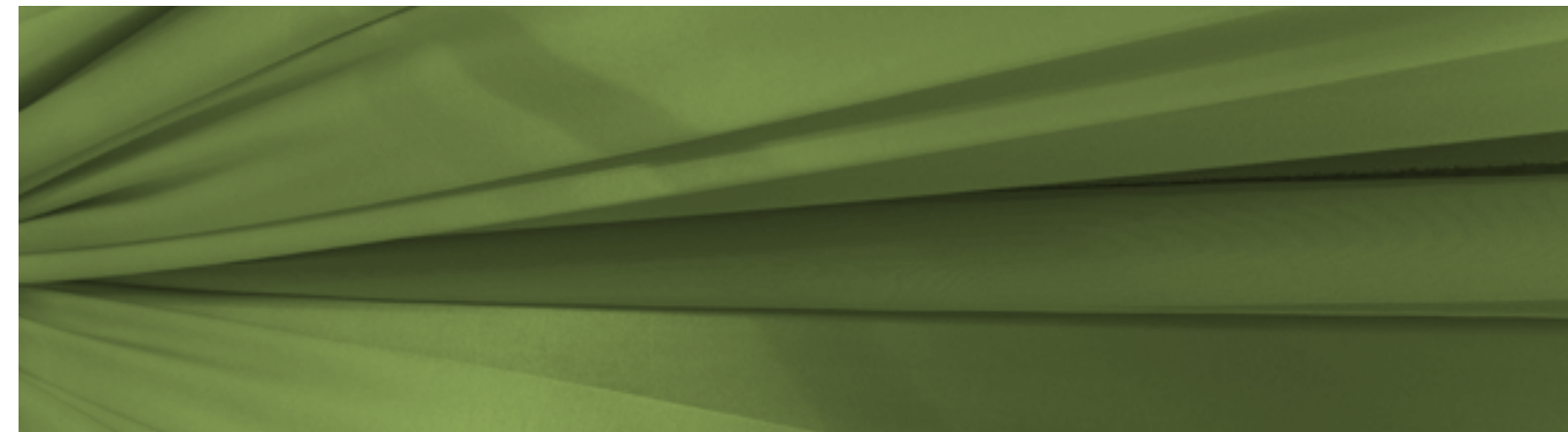
**The cradle-to-grave approach is still dominant.**

In 2017 at global level only 20% of clothing waste was reused or recycled, while the remaining 80% went to landfills or was incinerated which equals to

87 billion Euro value of material, on an annual basis and only 1% of the material used to produce clothing was recycled in a closed-loop process<sup>10</sup>.

Furthermore, in parallel to the evolving EU legislative framework, European systems of production and consumption shall be reshaped to achieve the EU's 2050 vision of "living well within the limits of our Planet"<sup>11</sup>.

The paradigm shift of going from linear to circular value chains can be achieved through solidarity and building empowering collaborations and partnerships within the entire value chain.



<sup>8</sup> Global Fashion Agenda (2021), "FASHION CEO AGENDA 2021".

<sup>9</sup> Textile Exchange (2020), "Material change insights report", pp.7-11.

<sup>10</sup> Ellen MacArthur Foundation (2017), "A new Textiles Economy: Redesigning Fashion's Future, Circular Fibres Initiative".

<sup>11</sup> GIZ (2019), "Circular Economy in the Textile Sector", pp. 11-13..

The Monitor for Circular Fashion is founded on the belief that the following factors will be instrumental in bringing about a transformational change towards sustainability and circularity in the fashion industry:



**Enhanced dialogue** among policy makers, companies, institutions, final users, associations, NGOs and other relevant stakeholders.



**Regulations and incentives** that address the crucial requirements for the implementation of a circular approach. These apply to large enterprises and small-and-medium-sized enterprises (SMEs) to support their transition to a circular business model while encouraging final users towards conscious behaviors.



**Awareness and education programs** on sustainability and circularity for all stakeholders to “allow consumers to make informed choices; create awareness of the shared responsibility of all stakeholders, including both business and consumers, to take an active role in preserving our planet; increase the demand for materials, products and processes that are more responsible and sustainable”<sup>12</sup>.



<sup>12</sup> UNECE (2021), “Recommendation No. 46: Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector” [https://unece.org/sites/default/files/2021-04/ECE\\_TRADE\\_C\\_CEFAC\\_2021\\_10E\\_Rec46-Textile\\_0.pdf](https://unece.org/sites/default/files/2021-04/ECE_TRADE_C_CEFAC_2021_10E_Rec46-Textile_0.pdf)

## 2.3 The legal framework to boost circularity in fashion

**Strategic documents at European level recognize textiles value chains as key in the move towards a circular economy where “urgent, comprehensive and coordinated actions” are needed<sup>13</sup>.**

As underlined above, Covid-19 pandemic showed the vulnerability of global value chains to protect the environment, health and the economy, particularly in industries such as the fashion industry<sup>14</sup>. It is necessary to address global systemic risks by establishing a regulatory framework that enables the transition to a circular economy.

In 2015 the European Commission adopted an Action Plan for the Circular Economy that defines 54 measures to “close the circle” of the product life cycle: from production and consumption to waste management and secondary raw materials market.

The introduction by the European Commission of the European Green Deal in 2019 gave a significant boost to climate action and detailed a stringent

roadmap for this transition. With the adoption of the new Circular Economy Action Plan in 2020, the European Commission has committed to accelerate this transition with the development of an integrated product policy framework and has recommended to implement measures along the lifecycle of products to address resource-intensive sectors such as textiles.

**By 2021, the European Union will introduce a comprehensive EU Strategy for Textiles, in consultation and coordination with all relevant stakeholders. The goal is to advance industrial competitiveness and innovation in the textile sector and contribute to the sustainability and circularity of products placed in the EU market.**

Eco-design criteria, set by the **Eco-design Directive<sup>15</sup>** for energy related products, could be extended to textiles to tackle the environmental footprint of product design during their lifetime, as already suggested, in 2018, by the EU Parliament<sup>16</sup> and, more recently, in 2019, by the Council of EU<sup>17</sup>.

These criteria could include sustainability requirements in terms of durability, reparability, recyclability and reusability of products as well as traceability and restrictions on the use of hazardous chemicals<sup>18</sup>. The EU Circular Economy Action Plan announced that the European Commission will also consider introducing material efficiency requirements on textiles products based on insights from the Energy Labeling Regulation<sup>19</sup> and its database.

**The European Parliament underlines the importance of including information on durability and reparability in the form of an environmental performance index**, considering multiple criteria throughout the lifecycle of products based on product category, and to provide this information to consumers at the point of sale<sup>20</sup>.

In order to increase the business and regulatory environment for sustainable and circular textiles in the EU, incentives and support for product-as-service models, circular materials and produc-

<sup>13</sup> European Commission (2020), “EU Circular Economy Action Plan”.

<sup>14</sup> Ellen MacArthur Foundation (2020), “How policymakers can achieve a resilient recovery with the circular economy”.

<sup>15</sup> European Parliament and Council (2009), “Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products”. See also the new eco-design requirements of the EU regulation on eco-design regulation that was adopted in 2019 and it became compulsory in September 1, 2021. Source: “Commission Regulation (EU) 2019/2020 of 1 October 2019 laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 244/2009, (EC) No 245/2009 and (EU) No 1194/2012”.

<sup>16</sup> European Parliament (2018), “European Parliament resolution of 31 May 2018 on the implementation of the Ecodesign Directive”.

<sup>17</sup> Council of the European Union (2019), “More circularity - Transition to a sustainable society - Council conclusions”.

<sup>18</sup> European Commission (2020), “EU Circular Economy Action Plan”.

<sup>19</sup> European Commission (2019), “Commission Delegated Regulation (EU) 2019/2015 of 11 March 2019 supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of light sources and repealing Commission Delegated Regulation (EU) No 874/2012”.

<sup>20</sup> European Parliament resolution (2020) “Towards a more sustainable single market for business and consumers”.



tion processes will be provided. Moreover, the EU Textile Strategy should provide guidelines to help member states to achieve high levels of separate collection of textile waste by 2025, in accordance with the EU Directive 2018<sup>21</sup>, by boosting selection, reuse and recycling of textile, through innovation, and by promoting industrial applications and regulatory measures such as "extended producer responsibility" (EPR).

To foster the transition across Europe, The European Union has put in place other measures specifically addressing waste and chemicals as they represent fundamental elements to enhance sustainable practices in value chains.

An example of the sustainable targets mentioned in the **EU Directive on Waste (Directive 2018/849)** asks member states to collect textile waste separately from January 1, 2025.

Governments were encouraged by the European Union to deploy circular economy and waste strategies. To respond to these requests some frontrunners countries such as France and Italy have adopted circular economy and anti-waste laws that pave the way to a circular economy. Other countries have opted for short-term or long-term circular initiatives without yet introducing specific regulations to implement circularity.

**French Anti Waste Law**<sup>22</sup> aims to help change the French society model from a linear economy to a circular economy, where waste is minimized and resources are reused as much as possible.

One of the most relevant provisions is the one concerning the prohibition on the destruction of unsold non-food inventory, such as textiles. Manufacturers, distributors, and stores with unsold inventory are required to donate or recycle it instead of incinerating it or dumping it in landfills. Additionally, the law expands incentives for manufacturers to design their products to be more easily recyclable. This new law also includes provisions to better inform citizens on the environmental characteristics of products.

With the legislative decree No. 116 of 2020<sup>23</sup>, Italy has brought forward the obligation of the collection of textile waste of three years, moving the hands backwards, to January 1, 2022.

**Italian Legislative Decree 116/2020** includes important innovations to move towards a circular economy, including strengthening the system of extended producer responsibility (EPR), the prevention of waste production and the traceability of waste.

With regards to chemicals, in October 2020, the European Commission adopted a **Chemical Strategy for Sustainability**<sup>24</sup> that focuses on a "safe and sustainable-by-design" approach with an intention to prevent hazardous chemicals from entering products right from the beginning of the design phase.

This life-cycle approach considers toxicity of chemicals at all stages of their existence – from manufacture to use, recycling and disposal.

The Strategy bans the most harmful

chemicals in consumer products, including in textiles, and requires hazardous chemicals to be substituted by safer and sustainable alternatives, and requires the disclosure of relevant non-confidential information on hazardous chemicals in the products to consumers and waste managers.

To measure progress towards circularity, the European Commission set a **Monitoring Framework for the Circular Economy**<sup>25</sup> at both the EU and national levels made of ten indicators across four thematic areas: production and consumption, waste management, secondary raw materials, and competitiveness and innovation.

The legislative paradigm shift towards a circular economy will need to be:

- linked to a **macro vision for change** shared by all relevant stakeholders and to be underpinned by a **strong case for the business sector to "turn circular"**. In particular, it is necessary to develop practical, technical, legal and financial support to SMEs to identify and implement business opportunities associated with the circular economy;
- **fostered by robust and harmonised environmental indicators**. These indicators play a key role in the transition to a circular economy and are crucial for the effective formulation, assessment, monitoring and evaluation of policies.

The transition from a linear to a circular economy will play a significant role in meeting the Sustainable Development Goals part of the 2030 Agenda.

<sup>21</sup>European Commission (2018), "Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste".

<sup>22</sup> French anti waste law (2020), "Loi relative à la lutte contre le gaspillage et à l'économie circulaire".

<sup>23</sup> Italian anti waste legislative decree (2020), "Attuazione della direttiva (UE) 2018/851 che modifica la direttiva 2008/98/CE relativa ai rifiuti e attuazione della direttiva (UE) 2018/852 che modifica la direttiva 1994/62/CE sugli imballaggi e i rifiuti di imballaggio".

<sup>24</sup> European Commission (2020), "Chemical Strategy for Sustainability".

<sup>25</sup> European Commission (2018), "Communication on monitoring framework for circular economy".



# Methodology for identification of KPIs

## 3 KPI areas

- 3.1 Corporate and energy KPIs
- 3.2 Tailored KPIs for fashion

# 3





# 3 KPI areas

## Corporate and energy KPIs

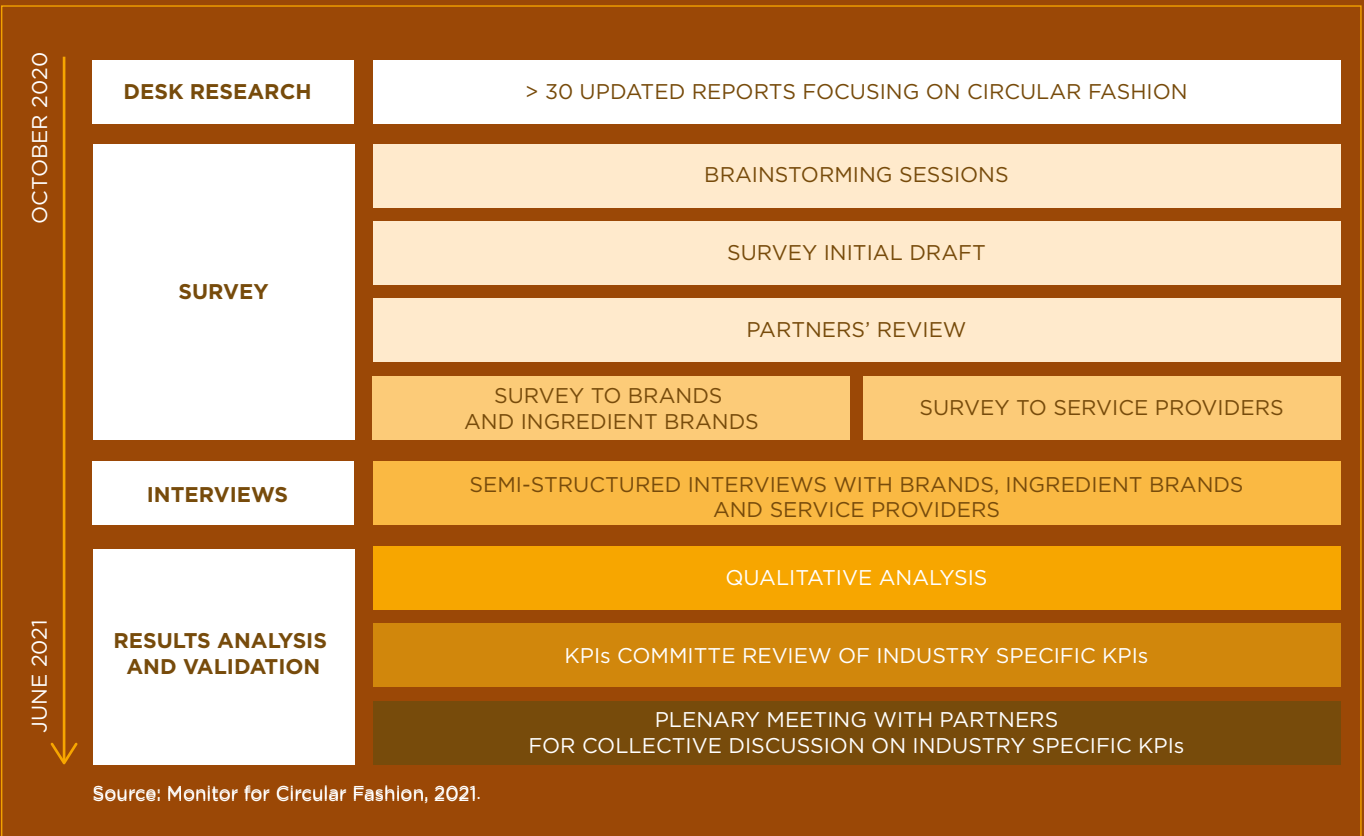
The “Circular Economy Report”<sup>26</sup> is an Enel X service, based on a validated methodology by the external certification body RINA and CESI, being accredited by Accredia, able to identify the current level of circularity of the company and to propose a roadmap of innovative solutions for boosting it.

The methodology, based on over 60 KPIs, is divided into two levels of analysis: Corporate and Energy-Site.

<sup>26</sup> Enel X has produced 10 “Circular Economy Reports” to generate the aggregate data analysis on Corporate and Energy KPIs.

# Tailored KPIs for fashion

The identification of over 30 fashion industry tailored KPIs was based on primary and secondary data, gathered by SDA Bocconi Sustainability Lab research team through desk research, an on-line survey and semi-structured interviews to the 14 companies part of the community.



## 3.1 Corporate and energy KPIS

The “Circular Economy Report” is an Enel X service, based on a validated methodology by the external certification body RINA and CESI, being accredited by Accredia, able to identify the current level of circularity of the company and to propose a roadmap of innovative solutions for boosting it.

The methodology, based on over 60 KPIS, is divided into two levels of analysis: Corporate and Energy-Site.

The Corporate analysis aims to assess the company’s strategic approach to sustainability and circular economy and how the underlying principles cross or-

ganizational processes and daily business. The areas of analysis of this level of assessment match with the key elements of the value chain: design, procurement, production inputs, energy consumption, waste, logistics, sales, post consumption.

The Corporate Assessment also provides an analysis of the UN Sustainable Development Goals touched by projects, initiatives or objectives carried on by the Company under analysis.

The Energy-Site analysis represents a technical deepening on the energy flows of a specific building of the Com-

pany (e.g. headquarter, production site, store, office). The areas of analysis evaluate energy sources and energy consuming systems, renewable energy, energy efficiency, energy management, services and solutions enabling the circular economy.

In order to measure the KPIS at the basis of the Corporate and Energy-Site analysis, two surveys containing qualitative and quantitative questions are submitted to the companies, aimed both at gathering information for the analysis and at defining and balancing the weights of the KPIS.

## 3.2 Tailored KPIS for fashion

The main objective of the Monitor for Circular Fashion is the identification of tailored KPIS that fashion companies could adopt to assess their progresses on two main areas: circularity and value chain traceability performance.

The identification of such KPIS was based on primary and secondary information, gathered through desk research, an on-line survey and semi-structured interviews.

At first, a desk analysis of more than 30 recent reports focused on circularity and sustainability in fashion carried out by SDA Bocconi Sustainability Lab re-

search team provided an overview on the KPIS that consulting companies, NGOs and public institutions recommend with regards to circular activities and value chain traceability.

More than 10 brainstorming sessions with industry experts and have been carried out to receive further inputs.

The members of The Monitor for Circular Fashion including “ingredient-brand” and “brand and retailer” partners were asked through an on-line survey to report the KPIS they adopt as well as other potentially adoptable performance indicators.

At the same time, “service-provider” partners were asked through specular surveys, to suggest adoptable KPIS based on their knowledge of the fashion industry. The respondents were also interviewed with one-to-one semi-structured interviews on the information they provided through the questionnaires.

The responses from the surveys were analyzed via qualitative methods by the SDA Bocconi Sustainability Lab research team to map out a coherent framework of indicators based on shared definitions and measure units.

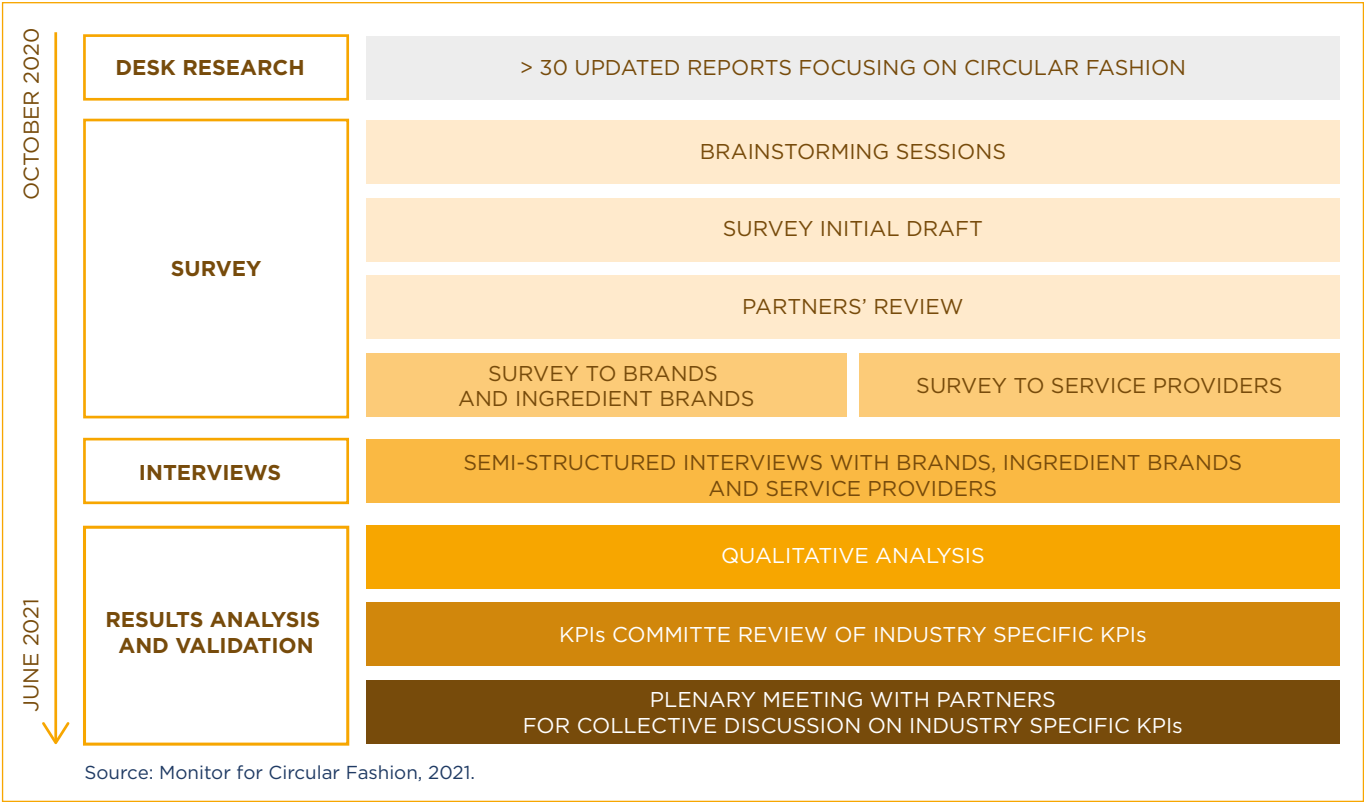


The KPIs Committee validated and further refined the KPIs list, suggesting some KPI guidelines for measurement. The Monitor partners discussed the identified performance indicators during a Plenary Meeting meant to include the perspective of brands, ingredient brands and service providers.

Finally, the KPIs Committee carried out with Sustainability Lab research team a closing review. The methodology to identify KPIs is summarized in figure 4 and a description of the complete methodology for the findings in the Monitor for Circular Fashion Report 2021 is presented in the annex.

**The KPIs Committee validated and further refined the KPIs list, suggesting some KPI guidelines for measurement.**

**Figure 4**  
Methodology for KPIs identification by SDA Bocconi Sustainability Lab Monitor for Circular Fashion 2021.



The identification of the fashion industry tailored KPIs was based on SDA Bocconi primary and secondary data, gathered through desk research, an on-line survey and semi-structured interviews to the companies part of the community.

Enel X methodology is based on over 60 KPIs, divided into two levels of analysis: Corporate and Energy-Site.

# Data analysis

## Fashion industry analysis

**4.1** Circular fashion activities and business models: key highlights from the research

**4.2** Enabling technologies for a circular fashion ecosystem

**4.3** Tailored KPIs for fashion: introducing the Circular Fashion Manifesto

**4.4** Circularity trade-offs, challenges and opportunities

# 4





# Fashion industry analysis

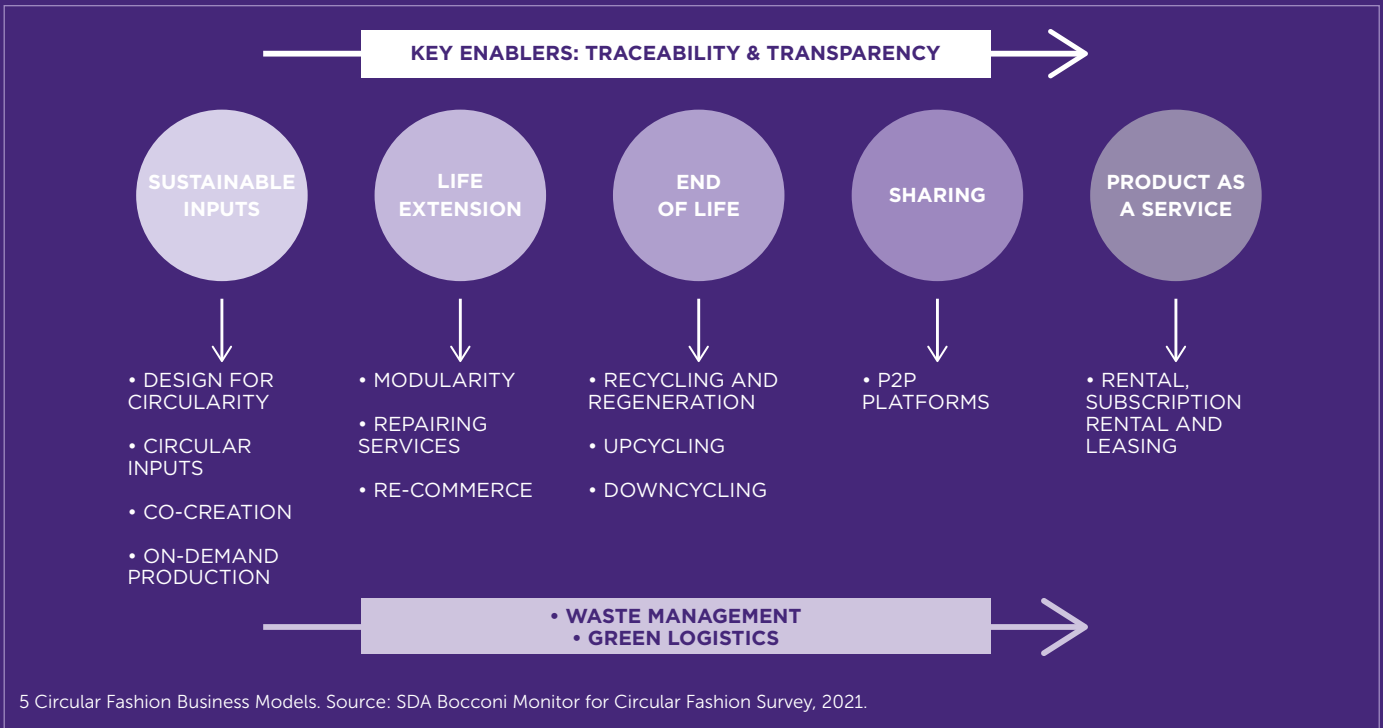
## The Covid-19 effect

Covid-19 can be considered as an accelerator for the transformational change towards sustainability and circularity in fashion.

## Circular Fashion Value Chain Activities

Upstream circularity activities such as "Design for Circularity", "On-demand

production", "Circular inputs", are currently much more diffused than downstream activities such as "repairing services", "rental, subscription rental and leasing", "re-commerce, second-hand market".



## Post-sale activities for circularity

In order to improve the circularity performance, companies must implement one-to-one communication actions with the final clients. Building long-term relations with them can help facilitate product take-backs in order to achieve resource efficiency.

## Enabling technologies for circularity

The companies of the Monitor for Circular Fashion identified the main technologies to accelerate circularity in fashion:

1. Recycling technologies
2. Blockchain
3. RFID
4. Automatic sorting machines
5. Online platforms for waste
6. Product passports
7. Artificial intelligence & IoT
8. 3D printing

## Tailored KPIs for Fashion: Introducing the Circular Fashion Manifesto

The Companies of the Monitor for Circular Fashion have set more than 30 tailored KPIs for the fashion industry in order to measure for each activity of the Circular Fashion Value Chain:

- TRANSPARENCY AND TRACEABILITY PERFORMANCE
- SUSTAINABILITY AND CIRCULARITY PERFORMANCE

Find the Circular Fashion Manifesto and KPI guidelines for measurement available on the website: [sdabocconi.it/circularfashion](https://sdabocconi.it/circularfashion)

# 4.1 Circular fashion activities and business models: key highlights from the research

The SDA Bocconi survey (see figure 5) has been completed by the 14 partners of the Monitor for Circular Fashion. All respondents were surveyed on all Circular Value Chain Activities (see figure 6) and across segments in terms of company size (small, medium, large companies<sup>27</sup>) and B2B/B2C/B2B2C business models (see figure 7) in the garment and footwear industry. Service providers were asked to complete the

survey and taking into account the aggregated overview on their clients, a total of over 930 companies are represented from the garment and footwear industry. The results of ingredient brands and brands & retailers have been kept separate, these results are strengthened by the responses from service providers and the additional comments provided by the KPIs Committee comprising of senior consultants.

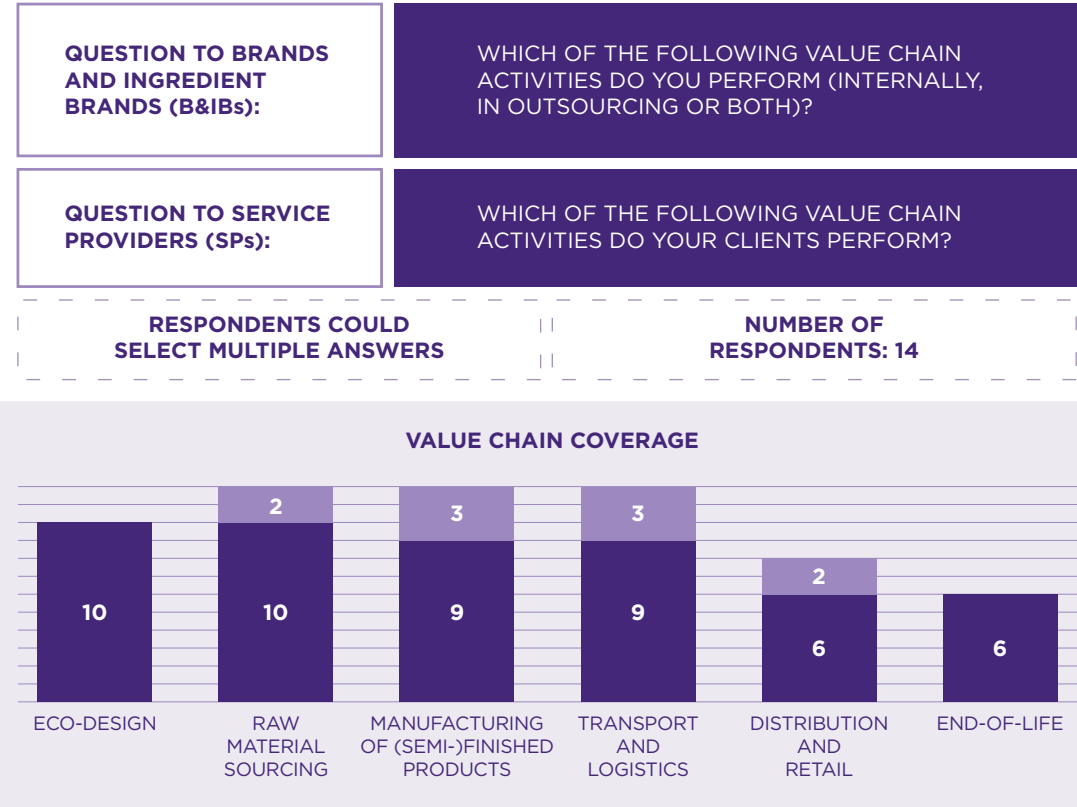
Ingredient brands and brands & retailers have been invited to participate in the Monitor for Circular Fashion, if they meet the following criteria:

- reporting system of sustainability aligned to a national or international standard;
- availability of governance for sustainability management;
- alignment to Agenda 2030 goals with periodical measuring.

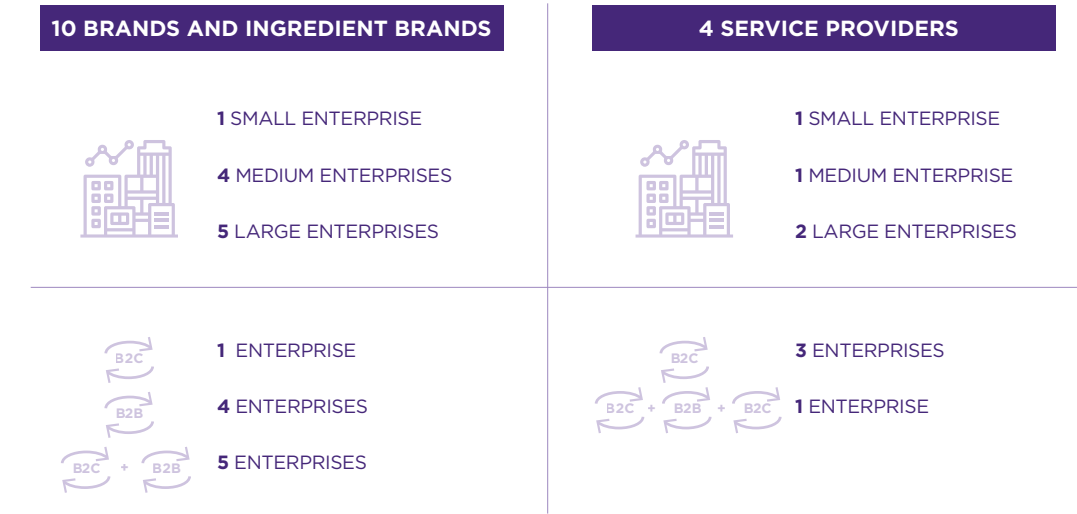


Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

<sup>27</sup> Source: [https://ec.europa.eu/growth/smes/sme-definition\\_en](https://ec.europa.eu/growth/smes/sme-definition_en).



Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.



Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

**Figure 6**  
Circular Value Chain Activities performed by the respondents of the Monitor for Circular Fashion.

**Figure 7**  
Characteristics of the respondents.

Despite the lack of statistical representativeness of the sample, the survey results, integrated with the qualitative interviews highlights that will be presented later on in the chapter, may be relevant to all fashion industry players as they provide an in-depth view on each step of the value chain realty, as experiences firsthand by companies. This section presents a selection of the main results from the survey of the companies of the Monitor for Circular Fashion. The results have been reviewed and validated by the KPIs Committee.

THE COVID-19 EFFECT

When asked about the impact of Covid-19 on firms’ sustainability strategies

(i.e. “How has Covid-19 impacted your company sustainability strategy?”), most respondents answered that “New sustainability goals were added” and that “Investments in sustainability increased”. None of the companies replied that “Investments in sustainability decreased”. **Covid-19 can thus be considered as an accelerator for the transformational change towards sustainability and circularity in fashion.**

CIRCULAR FASHION VALUE CHAIN ACTIVITIES

When asked about which circularity activities (see table 1 and Figure 8) have already been or could be performed

in the future (i.e. “For each of the following circular activities, please select if you perform it, are evaluating the possibility of performing it or are not interested in performing it”), it appears that **upstream circularity activities** such as “Design for Circularity”, “On-demand production”, “Circular inputs”, **are currently much more diffused than downstream activities** such as “repairing services”, “rental, subscription rental and leasing”, “re-commerce, second-hand market”. The KPIs Committee confirms that **on-demand production can reduce the use of resources to the minimum, coherently with the UN SDGs.**



Figure 8  
Detailed circularity activities along the Circular Fashion Value Chain.

Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

TABLE 1 - DETAILED CIRCULAR FASHION ACTIVITIES DEFINITIONS<sup>28</sup>

DETAILED CIRCULARITY <sup>29</sup> ACTIVITY	DEFINITION
DESIGN FOR CIRCULARITY	Approach to create a product with the ultimate goal of ensuring its maximum circularity potential.
CO-CREATION	Product or service design process in which one or more players of the supply chain, or the final users, are involved directly.
MODULARITY SOLUTIONS	Solutions developed following a design principle that subdivides the whole system into smaller parts (i.e. the modules), which can be independently created, modified, replaced, or exchanged with other modules. Modularity solutions implement the design for durability principle. Modularity solutions may be applied to machineries too.
CIRCULAR INPUTS	Bio-based inputs or inputs previously used in other products or processes, therefore not coming from virgin sources, that are included as ingredients in a brand new process or product.
ON-DEMAND PRODUCTION	Manufacturing process where goods are produced only when or as the user places the order, therefore basing production on actual orders rather than forecasts.
REPAIRING SERVICES	Services developed to fix garments, with the goal of increasing their usable lifetime. Repering services implement the design for durability principle.
RENTAL, SUBSCRIPTION RENTAL AND LEASING	Rental: possibility to pay for the use of an item or a range of items for a limited time, without owing it. Subscription rental: a fee paid possibility to access to an item or to a range of items for a limited time, without owing it, based on a recurring agreement. Leasing: possibility to access to an item or a range of items for a longer fixed period with final options to switch the product, return the product, keep the products.
RE-COMMERCE	Buying and selling of pre-owned goods, giving them an extra life.
PEER-TO-PEER PLATFORMS	Digital spaces where companies or final users can enhance the development of a second-end-market for garments.

<sup>28</sup> Rinaldi, F.R. (2019), “Fashion Industry 2030. Reshaping the Future Through Sustainability and Responsible Innovation”, Egea – Bocconi University Press.  
<sup>29</sup> The adopted definition of circularity can be found here: <https://ec.europa.eu/eurostat/web/circular-economy>.

<b>RECYCLING AND REGENERATION</b>	End-of-use measures to avoid disposal.
<b>UPCYCLING</b>	Upcycling is the recycling of waste where the recycled material is of higher quality and functionality than the original, in the same or in a different industry <sup>30</sup> .
<b>DOWNCYCLING</b>	Downcycling is the recycling of waste where the recycled material is of lower quality and functionality than the original material, in the same or in a different industry <sup>31</sup> .
<b>WASTE MANAGEMENT</b>	Refers to a process of managing waste from inception to final disposal, including different activities (e.g. collection, transport, processing, disposal, monitoring of waste materials)
<b>GREEN LOGISTICS</b>	Set of measures and policies applied to logistics with a reduced environmental impact, compared to business as usual.

Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

### POST-SALE ACTIVITIES FOR CIRCULARITY

From the survey it appears that few companies perform post-sale activities related to circularity. The most diffused activities are related to “consumer care and maintenance schemes” and this is confirmed by Service Providers.

The companies of the Monitor for Circular Fashion may be considered best practices because 7 out of 10 also “educate and raise awareness of final users by providing data on fashion industry impacts”, however the service providers confirm that on average just 14% of their clients do the same.

What could be the next steps? “Broadcasting behavioral campaigns”, “activating final users participation into circular processes (e.g. take-back schemes) and “monitor final users’ behavior with respect to items usage, maintenance and disposal”.

The KPIs Committee confirms that in **order to improve the circularity performance, companies must implement one-to-one communication actions with the final clients. Building long-term relations with them can help facilitate product take-backs in order to achieve resource efficiency.**

**In order to improve the circularity performance, companies must implement one-to-one communication actions with the final clients.**

<sup>30</sup> Adapted from Ellen MacArthur Foundation & ANSYS Granta (2019), “Circularity indicators. An approach to measuring circularity”.  
<sup>31</sup> Adapted from Ellen MacArthur Foundation & ANSYS Granta (2019), “Circularity indicators. An approach to measuring circularity”.

### CIRCULAR FASHION BUSINESS MODELS

Circular Fashion Value Chain Activities can be organized within each company according to 5 Circular Fashion Business models<sup>32</sup> (see figure 9):

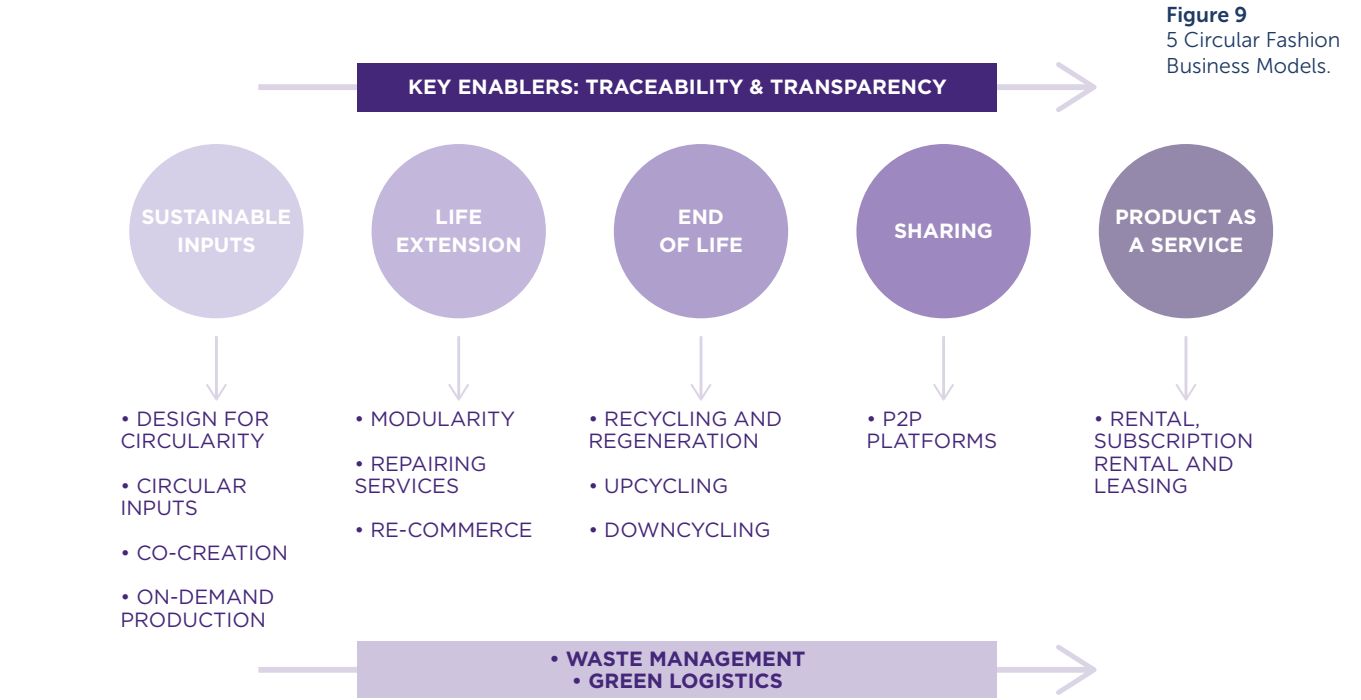
**1. sustainable inputs** (i.e. raw materials, water, energy): companies focusing on this business model adopt eco-design principles in selecting the inputs and in the manufacturing activity<sup>33</sup>, source circular inputs, focus on co-creation and on-demand production in order to reduce the waste of resources used as inputs;

**2. life extension:** companies focusing on this business model adopt a modularity approach both in design and manufacturing, repairing services to extend the life of products and components, implement re-commerce;

**3. end of life:** companies focusing on this business model work on recycling and regeneration, upcycling and downcycling;

**4. sharing:** companies focusing on this business model allow to increase the utilization rate of products through P2P platforms;

**5. product as a service:** companies focusing on this business model work on rental, subscription rental and leasing. Each company may decide to adopt different Circular Fashion Business Models.



Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

<sup>32</sup> Main sources considered for the Circular Fashion Business Models definition: Accenture Strategy (2014), “Circular Advantage. Innovative Business Models and Technologies to Create Value in a World without Limits to Growth”; OECD (2019), “Business Models for the Circular Economy Opportunities and Challenges for Policy”; Accenture and Fashion for Good (2019) “The Future of Circular Fashion. Assessing the viability of circular business models”.  
<sup>33</sup> <https://www.ellenmacarthurfoundation.org/explore/circular-design>; <https://www.ellenmacarthurfoundation.org/explore/fashion-and-the-circular-economy>.



## Aggregate data analysis on corporate and energy KPIs along the circular fashion value chain

### SURVEY RESULTS FROM INGREDIENT BRANDS AND BRANDS & RETAILERS OF THE MONITOR FOR CIRCULAR FASHION

The following findings may be highlighted from Enel X survey results<sup>34</sup>.

#### Corporate KPIs

##### 1. Differentiation of suppliers selection scoring based on products' CE-related/sustainability certifications

Majority of companies source from suppliers with some CE-related/sustainability certification such as C2C, Energy Star, LCA. In order to guarantee the transformational change towards circularity, brands & retailers may partner even more with ingredients in order to certify their products and processes.

##### 2. Implementation of minimum threshold of reused or recycled or renewable or bio-based content for production items in order to be eligible for purchase

75% of the companies declare to set minimum thresholds of reused or recycled or renewable or bio-based content for production items (e.g. raw materials, components, machineries and technical equipment, packaging, etc.). 37% declare to always adopt minimum thresholds. Setting minimum thresholds could help companies become compliant with Extended Producer Responsibility (EPR)<sup>35</sup>.

<sup>34</sup> Enel X survey has been completed by seven ingredient brands & brands retailers.

<sup>35</sup> As suggested by EURATEX (EURATEX (2020), "Extended producer responsibility (EPR) in textile products. Position paper") a high level of harmonization can be expected among countries, starting from EU Member States.

"The following points should apply without difference of interpretation across Europe:

1. EPRs revenue should finance the same goals, the qualitative objectives should be aligned;
2. eco-modulation fees should be applied in the same way;
3. level playing field should be ensured for every actor of the value chain; makers, distributors, retailers, authorities etc. should have the same responsibilities to avoid market distortions;
4. the system should be enforceable, allowing monitoring of implementation, data collection and being fully applicable for imported and on-line sold products;
5. SMEs limited capacity should be duly considered;
6. harmonized waste-criteria should be available;
7. flexibility to opt out by using an own-system without however creating loopholes for free-riding;
8. flexibility within a common framework, national needs should still be respected as different interests to participate in Producer Responsibility Organization (PRO), existing systems (if any), different Competent Authorities."

##### 3. Use of recycled materials over total material inputs

The use of recycled materials over the total material inputs is still below 30%. The use of recycled materials is to be considered a huge potential for the years to come.

##### 4. Use of second hand, repaired and/or regenerated materials over total material inputs

The use of second hand, repaired and/or regenerated materials is lower compared to the use of recycled materials. Companies shall increase the reuse of pre-consumer and post-consumer waste, by gaining access to platforms willing to meet demand and supply of pre-consumer waste and by implementing take-back schemes at B2C level. In this process, companies need support from policy makers and trade associations in order to have access and to be enabled to reuse waste.

##### 5. Use of recyclable or biodegradable raw materials over total material inputs

In order to guarantee the recyclability and biodegradability of the finished product, it is important to plan ahead and respect eco-design principles. This ensures that the product is monomaterial or modular. The blends among fibers that are recyclable and biodegradable with other fibers that are not, does not allow a final product to be recyclable and/or biodegradable.

##### 6. Reuse or recycling rate of own production waste recovered for own use as material or water recovered as process input

Almost all companies recycle their own production waste but most of the companies reuse less than 21% of their waste resources (i.e. materials, water, energy).

##### 7. Reuse or recycling rate of own production waste recovered as material or process input in other loops

Almost 50% of the companies recover more than 85% of their own production waste in other loops, including the reuse of packaging. Partnering with other players along the supply chain is essential in order to optimize the logistics.

### 8. Use of green mobility solutions for components and transportation of products between production sites and/or to distribution hubs over total kilometers for logistics and transportation and percentage of electric vehicles provided to employees over total corporate fleet

The companies of the Monitor for Circular Fashion are not yet focusing on green logistics solutions and green mobility with inter-modal services, electric cars or sharing mobility services to move the merchandise among the various production and distribution sites. The adoption of green transportation solutions for employees to reduce the CO<sub>2</sub> emissions and diffuse the culture of sustainability within the organizations is low.

### 9. Implementation of product-as-a-service solutions to maximize asset usage and/or facilitate end of life management

As an alternative to the traditional sales model, the “product-as-a-service” has not been adopted in the fashion industry, especially in the B2C model and represents an important solution to extend product life. On the B2B side, especially for companies that supply machineries, this model is a standard service.

### 10. Selling of second-hand or regenerated products with minimum quality guarantee

Almost all companies have started selling second-hand or regenerated products. These are predominantly pilots or isolated projects at the moment. B2C companies may develop take-back schemes and incentives for final users in the future, to accelerate the growth of this business model through direct (retail stores) or wholesale channels (dedicated online platforms).

### 11. Collection of end-of-life products for recovery and recycling purposes (e.g. repairing and take back programs)

Almost all companies promote repairing services, however most of these are pilots or isolated projects. Repairing services may be considered as the most sustainable way of prolonging the product life. Take-back programs may be a way to give a second life to components such as textile and accessories. In order to for this business model to be viable, it is necessary to create a circular eco-system that enables the collection of second hand products, provides access to reverse-logistics and sorting, either directly by the brands or in collaboration with specialized players.

### 12. The company's CE strategy and goals, transparency and disclosure of CE commitments and alignment in line with the corporate multi-year plan

Almost all companies include qualitative objectives and strategies for circularity in their industrial plans, however only a small number have set measurable targets (e.g. year, reduction targets for quantity of materials, energy and CO<sub>2eq</sub> emissions). It would be important in the near future to set quantitative targets at both corporate and product level.

### 13. Engagement of employees, suppliers and customers on CE topics (e.g., trainings, workshops etc...)

Almost all companies implement initiatives to engage internal and external stakeholders. Employees are especially involved through training, workshops and internal communication initiatives. Suppliers are involved to improve sustainability and circularity performance through partnerships. All companies declare to have in place communication strategies, both B2B and B2C in order to inform them about product characteristics and corporate sustainability initiatives. The most used tools to reach the clients are newsletters, corporate website, social channel and sustainability reports.

### Energy KPIs

The global fashion industry is one of the most polluting when it comes to emissions released into the atmosphere. This is mainly due to the production cycle of garments, from the extraction of raw materials to the manufacturing process, up to distribution. There are very few companies in the sector that utilise energy from renewable sources at their factories / offices. Even if there is a positive trend towards green energy, most purchase all the necessary energy from the grid. Among the latter, a significant number of companies purchase energy certified from renewable sources through guarantees of origin. Given the high energy requirement, especially from production companies along the fashion supply chain, it would be relevant to reduce greenhouse gases emissions, and give preference to on-site production of energy from renewable plants (eg. PV) and from renewable sources certified by guarantees of origin, over the purchase of energy from the grid. Furthermore, not all companies in the supply chain are equipped with an internal consumption monitoring system, a tool that is particularly useful for guaranteeing the efficient management of energy loads and allowing prompt intervention as part of the general maintenance process. Mapping consumption would allow companies to both monitor their consumption as well as identify areas for improvement as part of their general energy management system. A step further in ensuring effective monitoring of the energy consumption would be to obtain energy certifications (e.g. ISO 50001), for boosting energy efficiency and for communicating transparently with various stakeholders.

Source: Enel X Monitor for Circular Fashion Survey, 2021.



# 4.2 Enabling technologies for a circular fashion ecosystem

The companies of the Monitor for Circular Fashion have been asked to identify the enabling technologies to accelerate circularity in fashion referring to the main value-chain activities that will be involved (see table 2)<sup>36</sup>. Several advantages may be coming from the use of technologies as enablers of circularity (see table 3). Among them: efficiency improvements; monitoring energy consumption and material flows; enhanced decision-making; data sharing; more efficient recycling waste management; improved logistics, inventory management and collection planning; transparency and instant tracking of both material sources and social aspects; more information available to final consumers; improved logistics, inventory management and collection planning; help

reduce waste, obsolete items and greenhouse gases emissions; transparency and instant tracking of both material sources and social aspects; more information available to final users; speedier just in time production.

reduce waste, obsolete items and greenhouse gases emissions; transparency and instant tracking of both material sources and social aspects; more information available to final users; speedier just in time production.

TABLE 2 - MAIN ENABLING TECHNOLOGIES TO ACCELERATE CIRCULARITY IN FASHION

MAIN ENABLING TECHNOLOGIES FOR CIRCULARITY	TECHNOLOGIES FOR TRACEABILITY	BLOCKCHAIN								
		RFID								
		ARTIFICIAL INTELLIGENCE & INTERNET OF THINGS								
	TECHNOLOGIES FOR CIRCULAR PROCESSES	RECYCLING TECHNOLOGIES								
		AUTOMATIC SORTING MACHINES								
		ONLINE PLATFORMS FOR WASTE								
		PRODUCT PASSPORTS								
		3D PRINTING								

MAIN FASHION VALUE-CHAIN ACTIVITIES INVOLVED:

1. ECO-DESIGN
2. RAW MATERIAL SOURCING
3. MANUFACTURING OF SEMI-FINISHED PRODUCTS
4. MANUFACTURING OF FINISHED PRODUCTS
5. TRANSPORT AND LOGISTICS
6. DISTRIBUTION AND RETAIL
7. END-OF-LIFE SERVICES

Several advantages will come from the use of technologies as enablers of circularity but challenges are still to be solved, for instance: privacy and security, lack of regulatory framework and data collection complexity and costs.

<sup>36</sup>Data collection and analysis is the starting activity for every technology. Data collection and analysis technologies include also fabric inspection, measuring, cutting, packing and logistics technologies integrated with machine interface and software able to record and share data: they are designed for better utilization of materials, first quality optimization, and reduction of generated waste, overall production costs and energy consumption.

TABLE 3 - ENABLING TECHNOLOGIES TO ACCELERATE CIRCULARITY: ADVANTAGES

TECHNOLOGIES/ ADVANTAGES	TECHNOLOGIES FOR TRACEABILITY				TECHNOLOGIES FOR CIRCULAR PROCESSES				
	1. BLOCKCHAIN	2. RFID	3. ARTIFICIAL INTELLIGENCE & IoT		1. RECYCLING TECHNOLOGIES	2. AUTOMATIC SORTING MACHINES	3. ONLINE PLATFORMS FOR WASTE	4. PRODUCT PASSPORTS	5. 3D PRINTING
EFFICIENCY IMPROVEMENTS	●	●	●			●	●		●
MONITORING ENERGY CONSUMPTION AND MATERIAL FLOWS	●	●	●			●	●	●	
ENHANCED DECISION-MAKING	●	●	●					●	
DATA SHARING	●	●	●					●	
MORE EFFICIENT RECYCLING					●	●	●	●	
WASTE MANAGEMENT	●	●	●		●	●	●	●	
IMPROVED LOGISTICS, INVENTORY MANAGEMENT AND COLLECTION PLANNING	●	●	●			●	●	●	
TRANSPARENCY AND INSTANT TRACKING OF BOTH MATERIAL SOURCES AND SOCIAL ASPECTS	●	●	●					●	
MORE INFORMATION AVAILABLE TO FINAL USERS	●	●	●					●	
SPEEDIER JUST IN TIME PRODUCTION	●	●	●						●

Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.



Some challenges are still to be solved in order to see the acceleration of the transformational change towards circularity enabled by these technologies. For instance: the costs of some technologies coming from the lack of economies of scale; energy need; demand for critical raw materials; privacy and security; digital trust; lack of interoperability; lack of regulatory framework; data collection complexity and costs.

**TABLE 4 - ENABLING TECHNOLOGIES FOR CIRCULARITY: CHALLENGES**

TECHNOLOGIES/ CHALLENGES	TECHNOLOGIES FOR TRACEABILITY				TECHNOLOGIES FOR CIRCULAR PROCESSES				
	1. BLOCKCHAIN	2. RFID	3. ARTIFICIAL INTELLIGENCE & IoT		1. RECYCLING TECHNOLOGIES	2. AUTOMATIC SORTING MACHINES	3. ONLINE PLATFORMS FOR WASTE	4. PRODUCT PASSPORTS	5. 3D PRINTING <sup>37</sup>
COSTS/ROI	●	●			●				
ENERGY	●					●			
PRIVACY AND SECURITY	●		●					●	
DIGITAL TRUST	●							●	
LACK OF INTEROPERABILITY	●						●		
LACK OF REGULATORY FRAMEWORK	●		●		●		●	●	
DATA COLLECTION COMPLEXITY AND COSTS	●		●				●	●	

Source: SDA Bocconi Monitor for Circular Fashion Survey, 2021.

<sup>37</sup> 3D printing is not presenting any major challenge according to the companies of the Monitor for Circular Fashion. Few points are still under discussion:  
1. Initial adoption of 3D printing may involve large investments since economies of scale may be missing.  
2. The amount of energy needed is hard to evaluate without a precise indication of the activity where 3D printing would be adopted.

## Point of view of the Monitor for Circular Fashion partners – Service Providers:



*Allowing the governance of the entire Supply Chain, the Stealth® Platform includes measuring the sustainability performances providing support to decision-makers for circularity. It may embrace new business models from Fashion Eco-design approaches. We can assume that Blockchain technology will offer the opportunity to certify the Supply Chain in terms of transparency and traceability. Potentially, AI and IoT may support the decision process to optimize costs and increase productivity.*

**LUCA TONELLO**  
SALES DIRECTOR DEDAGROUP STEALTH



*Our goal is to contribute to the reduction of the environmental impact of the textile industry, through solutions that optimize the portions of first choice fabric, minimizing second choice and waste, as well as consumption and the impact derived from packaging and logistics; as well as making the data of the control process available to the garment maker production chain, and organize logistics efficiently. To date, our solutions generate on average 1.5% more prime quality fabric portions, at least 40% less use of packaging materials, with a reduction of at least 30% in energy consumption.*

**LUCA RAVASIO**  
MANAGING DIRECTOR PLM IMPIANTI

*Digital technologies, in their many variations, have the potential to map, organise, and optimise our global business network, a critical component in adapting to a circular economy. Is the perfect opportunity for environmental-first design. AI, IoT and blockchain, can increase product circulation by intelligent inventory management, pricing and demand prediction, and predictive maintenance. AI, in particular, can also improve recycling materials by sorting and disassembling products, and promoting components remanufacturing.*

**PIETRO LANZA**  
PRESIDENT INTESA, IBM GROUP



*Temera fosters a new approach to sustainability and circularity in Fashion through the use of IoT technologies. Traceability is the only way to grant a real commitment by brands to a more responsible product lifecycle.*

**ARCANGELO D'ONOFRIO**  
CEO AND FOUNDER TEMERA





# 4.3 Tailored KPIs for fashion: introducing the Circular Fashion Manifesto

The following **Circular Fashion Manifesto** is answering the UNECE “Sustainability Pledge” inviting all actors in the garment and footwear industry to take action for traceability and transparency in order to accelerate the sustainability and circularity of value chains in this industry, in line with **the United Nations 2030 Agenda for Sustainable Development**.

The initiative aims to establish a mechanism to support the uptake of measures in the **UNECE Recommendation No. 46** as well as relevant UN/CEFACT standards, and to support the monitoring of their implementation.

The Companies of the Monitor for Circular Fashion have set more than 30 tailored KPIs for the fashion industry in

order to measure for each activity of the Circular Fashion Value Chain:

- **transparency and traceability performance;**
- **sustainability and circularity performance.**

The commitments are listed below:

1. implementing eco-design principles
2. measuring traceability
3. investing on r&d
4. reducing waste
5. performing responsible manufacturing
6. supporting shared audits and interoperability among platforms
7. achieving decarbonization
8. educating final users on responsible consumption
9. developing reliable sustainability claims
10. engaging final users to extend the life of products

Each company will decide the time-frame for implementing the KPIs and all players intend to select as many KPIs as possible, keeping in mind their own business models and activities of their value chain.

**Find the Circular Fashion Manifesto and KPI guidelines for measurement available on the website:**  
[sdabocconi.it/circularfashion](https://sdabocconi.it/circularfashion)



**Figure 10**  
United Nations Sustainable Development Goals.



**Figure 11**  
Circular Fashion Manifesto.

# 4.4 Circularity trade-offs, challenges and opportunities

With help from the results of the survey followed by in-depth one-to-one interviews with the companies of the Monitor for Circular Fashion, the SDA Bocconi Sustainability Lab team received insight from the companies of the community on the most relevant trade-offs, obstacles and advantages of investing in circularity (see tables 5, 6, 7).

When increasing circularity performance, companies may face operational, environmental, economic and quality trade-offs.

TABLE 5 - CIRCULAR FASHION TRADE-OFFS

RELEVANT QUOTES FROM ONE-TO-ONE INTERVIEWS

1. HIGHER OPERATIONAL COMPLEXITY	2. ENVIRONMENTAL IMPACTS OF PROCESSES, INCLUDING LOGISTICS	3. AVAILABILITY OF VOLUMES	4. COSTS OUTWEIGH PROFITS	5. LEAD-TIME AND TIME TO MARKET	6. QUALITY ISSUES
OPERATIONAL	ENVIRONMENTAL	OPERATIONAL	ECONOMIC	OPERATIONAL	QUALITY
<p>“We are experimenting, and it is normal that some costs outweigh profits in the short term...”</p> <p>“The higher complexity comes from the fact that any waste product could be used - for instance fertilizers could be used for dying. Also, industrial production scale requires restructuring the current processes. Input materials may require adapting to some machineries...”</p> <p>“We used to work with linear value chains: we need time to shift towards a circular value chain and complexity is a side effect, just like the need for new competences and skills...”</p>	<p>“Recycling processes may be very energy intensive.”</p> <p>“Rental business models may increase the environmental impact through logistics.”</p>	<p>“Volumes are still low so we may have some issues in terms of minimums.”</p>	<p>“The costs are related to the lack of availability of infrastructure and technology.”</p> <p>“We are in the initial phases of circularity. When we will be entering in the development and maturity there will be lower costs.”</p>	<p>“The availability of raw materials may be depending on agriculture or waste material from food industry.”</p>	<p>“We are experimenting, and it is normal that... we need to work on fine-tuning the quality.”</p>



The most relevant obstacles in circular fashion highlighted by the companies are related to:

- costs;
- availability of technologies and infrastructure;
- external cultural obstacles, law and regulatory obstacles<sup>38</sup>;
- availability of external and internal competencies;

- internal cultural obstacles and process inertia.

Confidentiality may be an issue too, in relations to the required traceability information for circularity.

**TABLE 6 - CIRCULAR FASHION OBSTACLES**

TOP RANKING CIRCULAR FASHION OBSTACLES	KEY FINDING	RELEVANT QUOTES FROM ONE-TO-ONE INTERVIEWS			
1. COSTS	Higher costs may be coming from reshaping the processes, lack of infrastructure and lack of technologies.	“The cost of recycling is higher because we miss the culture of recycling: we still need a lot of time to update the culture.”	“Eco-design costs are much higher for raw materials and processes related to cultural preparation, starting from the designers.”	“We need fiscal advantages on costs related to circularity.”	“We are in the initial phases of circularity: when we will be entering in the development and maturity there will be lower costs.”
2. AVAILABILITY OF TECHNOLOGIES	Some technologies such as recycling technologies and automatic sorting machines are still under way.	“We are in the phase to scale the technologies.”		“We still need technologies that allow us to disassemble.”	
3. AVAILABILITY OF INFRASTRUCTURE	Infrastructure for recycling and waste management is still to be developed.	“Infrastructure for recycling is still missing.”		“The Government should invest in platforms connecting demand and supply of waste.”	
4. EXTERNAL CULTURAL OBSTACLES	External cultural obstacles are related to the resistance to change among external players, such as suppliers or final users.	“We will be able to scale circularity when the consumer will accept that we need to change the approach: the consumer is still not prepared to accept the circular products.”			
5. LAW AND REGULATORY OBSTACLES	Regulatory obstacles are mainly at waste level and at circularity of raw materials.	“The classification of waste should be loosened a bit.”	“Regulatory obstacles are mainly at waste level and at circularity of raw materials.”	“Regulations are today an obstacle to circularity: for instance, the law about the persistent pollutants accepts some pollutants on second-hand garments; if they become recycled there is no compliance with the legislation.”	
6. AVAILABILITY OF EXTERNAL COMPETENCIES	The virtuous cycle of circularity requires developing ad hoc competences and skills through a systemic approach leveraging on education.	“We need to develop competences to make technologies work.”	“We are not always able to recycle blends.”	“There is an issue in collection and sorting of waste.”	“There is a lack of a network in place for recycling.”
7. AVAILABILITY OF INTERNAL COMPETENCIES					
8. INTERNAL PROCESS INERTIA	Internal process inertia is related to the operations resistance to change.	“It is a matter of change of the organizational model and consolidated processes at the level of the structure of operating habits.”			
9. INTERNAL CULTURAL OBSTACLES	Internal cultural obstacles are related to resistance to change within the company among executives or employees.				
10. CONFIDENTIALITY	Confidentiality may be an issue in relations to the required traceability information for circularity.	n.a.			

<sup>38</sup> Other authors confirm the lack of technologies and infrastrucutre and the need for greater consumer pull and regulations to accelerate brand action. Sources: Lacy, P.; Long J.; Spindler W., Orneli S., (forthcoming) "Il manuale della circular economy. Realizzare il vantaggio circolare", Egea; Lacy, P.; Long J.; Spindler W. (2020), "The Circular Economy Handbook. Realizing the Circular Advantage", Palgrave Macmillan.

Largely, all companies confirm that improved brand reputation, increased final user loyalty, new business opportunities, new jobs and cost reduction can be considered the main advantages of an improved circularity performance.

**TABLE 7 - CIRCULAR FASHION ADVANTAGES**

TOP RANKING CIRCULAR FASHION ADVANTAGES	KEY FINDING	RELEVANT QUOTES FROM ONE-TO-ONE INTERVIEWS
1. IMPROVED BRAND REPUTATION AND FINAL USER LOYALTY	Circularity increases brand reputation and final user loyalty.	“Brand reputation is increased both at B2B and B2C level.” “Clients need to see evidence.” “The brands we work with are very interested about circularity.”
2. NEW BUSINESS OPPORTUNITIES	Circularity generates new business opportunities.	“Circularity generates new sales channels and new product categories.”
3. NEW JOBS	New jobs will be created in the medium-long term.	“Circularity generates new jobs, new technology providers...etc...”
4. COST REDUCTION	In the short term the costs increase. The cost reduction is expected in the medium-long term.	“Cost reduction will take place in the medium-long term thanks to resources efficiency.”

In conclusion, the opportunities coming from an increased circularity performance exceed the challenges. In the next chapter we present some best practices that discuss how to increase the circularity performance and provide some guidelines to driver Managers’ Actions.

Improved brand reputation, increased final user loyalty, new business opportunities, new jobs and cost reduction can be considered the main advantages of an improved circularity performance.

The opportunities coming from an increased circularity performance exceed the challenges.



# Innovative solutions

## Unlocking circular fashion opportunities

- 
- 5.1 How to increase circularity performance
  - 5.2 Guidelines to drive Managers' Actions
  - 5.3 Monitor for Circular Fashion: next steps

# 5



# Unlocking circular fashion opportunities

## How to increase circularity performance

Reimagining the future of the industry towards circularity requires a collective effort. The community comprising of 14 member companies of the Monitor for Circular Fashion, are of the opinion that to increase circularity performance of the industry as a whole, the following actions should be prioritized:

1.	Measuring and assessing circularity	
2.	Increasing the level of traceability of the fashion value chains	
3.	Resolving circular fashion trade-offs	
4.	Engaging final clients/users in circularity initiatives	
5.	Improving the collection of waste	
6.	Accelerating industrial symbiosis	
7.	Scaling-up circularity pilot projects	
8.	Develop harmonized EU-wide end of-waste criteria	

 **MANAGERS' ACTIONS**

 **JOINT INDUSTRY ACTIONS**

 **POLICY MAKERS' ACTIONS**

# Guidelines to drive Managers' Actions

According with the Monitor for Circular Fashion, companies of the Fashion Industry could consider the following activities in their roadmap to circularity.

## Urgent Managers' Actions to increase circularity performance

- measuring and assessing circularity, starting from the implementation of eco-design principles for durability, disassembly and recycling;
- engaging final clients/users in circularity initiatives.

## Managers' Collaborative Actions to increase circularity performance

- invest in R&D for technological innovations to solve the issues of quality and compliance with technical requirements of circular products;
- engage with policy makers to develop circularity infrastructure and to make the supply-chains more traceable in order to guarantee that final users

will have access to information for conscious purchases and governments will be able to better regulate the sector, incentive schemes that start from a level playing field;

- work on collaborative projects among companies and with other stakeholders such as academia and technology providers to resolve circular fashion trade-offs and scale-up circularity pilot projects.



# 5.1 How to increase circularity performance

Reimagining the future of the industry towards circularity requires a collective effort. The community comprising of 14 member companies of the Monitor for Circular Fashion are of the opinion that to increase circularity performance of the industry as a whole, the following action items should be prioritized:

- 1. measuring and assessing circularity**, starting from the implementation of eco-design principles for durability, disassembly and recycling<sup>39</sup>;
- 2. increasing the level of traceability and transparency of the fashion value chains**<sup>40</sup>;
- 3. resolving circular fashion trade-offs**<sup>41</sup>;
- 4. engaging final clients/users in circularity initiatives**;
- 5. improving the collection of waste**;
- 6. accelerating industrial symbiosis**<sup>42</sup>;
- 7. scaling-up circularity pilot projects**;
- 8. develop harmonized EU-wide end-of-waste criteria**<sup>43</sup>.

<sup>39</sup> See Circular Fashion Manifesto of the Monitor for Circular Fashion.

<sup>40</sup> See UNECE (2021), "Recommendation No. 46: Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector".

<sup>41</sup> See table 5 of this Report.

<sup>42</sup> Industrial symbiosis is the process by which wastes or byproducts of an industry or industrial process become the raw materials for another. Application of this concept allows materials to be used in a more sustainable way and contributes to the creation of a circular economy (European Commission, 2018 [https://ec.europa.eu/environment/europeangreencapital/wpcontent/uploads/2018/05/Industrial\\_Symbiosis.pdf](https://ec.europa.eu/environment/europeangreencapital/wpcontent/uploads/2018/05/Industrial_Symbiosis.pdf)).

<sup>43</sup> "End-of-waste criteria specify when certain waste ceases to be waste and becomes a product, or a secondary raw material. According to Article 6 (1) and (2) of the Waste Framework Directive, certain specified waste ceases to be waste when it has undergone a recovery operation (including recycling) and complies with specific criteria, in particular when:

- the substance or object is commonly used for specific purposes;
- there is an existing market or demand for the substance or object;
- the use is lawful (substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products);
- the use will not lead to overall adverse environmental or human health impacts."

[https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive\\_en#ecl-inpage-632](https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en#ecl-inpage-632)

These priorities to increase circularity performance may require both Managers' Actions, Joint industry Actions and Policy Makers' Actions.

## Point of view of the Monitor for Circular Fashion partners – KPIs Committee:



*The fashion industry is undertaking an extraordinary transformation to improve the links between production, environment and society, establishing a new paradigm based on the principles of circularity and reuse. To turn the challenge into an opportunity, fashion brands must develop sustainable business models across the product lifecycle. Business Models based on actionable and measurable solutions resulting from digital and technology innovation across the value chains, incentive mechanisms and sustainable finance instruments to support lighthouse investments, harmonized industry regulation across all the Countries.*

BIP S.p.A.

*Improving circularity in the fashion industry must be a group effort to which all players in the sector including policymakers and clients must contribute. Although all the actions identified by the Monitor for Circular Fashion facilitate the shift from a linear model the most urgent next steps, for their ability to increase innovation and engage final users are, in our opinion:*

- 1. increasing circularity pilot projects finding ways to render them scalable;*
- 2. increasing final user communication / education initiatives on circularity.*

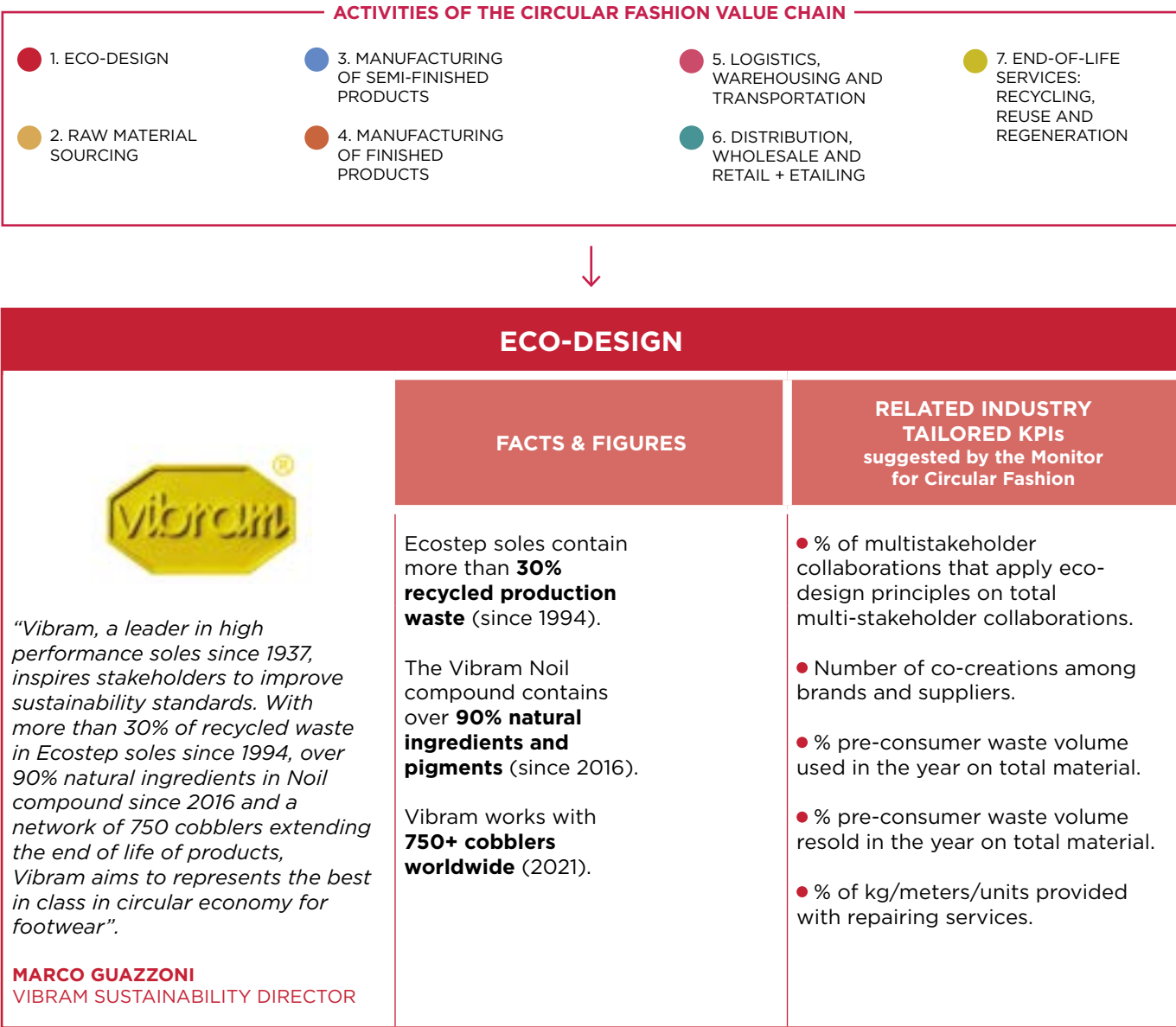
*In the next five years circularity must be injected across the product cycle starting from the aforementioned next steps working to embrace the entire life cycle.*

**GAIA GIUSSANI**  
DIRECTOR | SUSTAINABILITY AND CLIMATE CHANGE



The Monitor for Circular Fashion provides examples of best practices that started the circularity journey, rethinking the activities of the Circular Fashion Value Chain, and implementing the action items highlighted above. The Figure below (Figure 12) is showing some best practices across the Activities of the Circular Fashion Value Chain, with suggested industry tailored KPIs.<sup>44</sup>

**Figure 12**  
Selected facts from the companies of the Monitor for Circular Fashion.





<sup>44</sup> The KPIs are under evaluation and will be tested in the coming months.







	FACTS & FIGURES	RELATED INDUSTRY TAILORED KPIs suggested by the Monitor for Circular Fashion
 <p><i>“The natural evolution of our sustainability path is the definition of our circularity goals. Increasing transparency and traceability within the supply chain, good practices and responsible innovation are our tools of change towards circularity, for increasingly virtuous value chains and processes. Our future task is the identification of strategies for the reuse, transformation, recovery and finally recycling of garments at the end of their life.”</i></p> <p><b>NICOLAS BARGI</b> SAVE THE DUCK CEO &amp; FOUNDER</p>	<p>Raw materials used in our products are certified according to specific standards:</p> <p><b>90% of the bulk production garments</b> are made with materials certified according to <b>STANDARD 100 by OEKO-TEX®</b>, testing method to verify that these materials do not contain or release substances harmful to the environment and human health.</p> <p><b>39% of the bulk production garments</b> are made with <b>BLUESIGN®</b> approved materials.</p> <p><b>6% of the bulk production garments</b> use materials certified according to the <b>Global Recycle Standard (GRS)</b>, these are materials of recycled origin.</p> <p>In 2020, approximately <b>27% of the purchased fabrics come from the ZDHC network</b>.</p> <p><b>80% of panel padding is recycled.</b></p> <p><b>15% of synthetic flake padding is recycled.</b></p>	<ul style="list-style-type: none"><li>● % of raw materials (kg/meters/units) including relevant and reliable data and information shared for disclosure available for partners of the value chain.</li><li>● % of raw materials (kg/meters/units) including sustainable certification (i.e. animal welfare, organic, etc...).</li></ul>

MANUFACTURING OF SEMI-FINISHED PRODUCTS		
	FACTS & FIGURES	RELATED INDUSTRY TAILORED KPIs suggested by the Monitor for Circular Fashion
 <p><i>“Circularity is a value and a goal, which we pursue in three work streams. We fully trace our production processes from the raw wool to the fabric. We manage natural resources responsibly, above all the crystal clear waters of the Biellese valleys that we return to nature completely purified through an in-house plant. We invest in eco-design, focusing on natural and renewable mono-materials (mainly 100% wool) and enhance textile by-products, reusing them in woollen fabrics such as flannel.”</i></p> <p><b>LUCIA BIANCHI MAIOCCHI</b> CSR MANAGER VITALE BARBERIS CANONICO</p>	<p>In 2020:</p> <p><b>91% of raw materials completely traceable</b> from farm to finish fabric.</p> <p><b>100% water purified</b> in internal plant. Returned to surface waters. <b>17% recycled in production processes</b> (goal for 2021: 40%).</p> <p><b>89% raw material yield</b> on total wool used in production. <b>9.5% by-products reused in circular economy projects.</b></p>	<ul style="list-style-type: none"><li>● % of traced kg/meters/units (on total number of kg/meters/units).</li><li>● Number of phases traced on the total phases covered in the value chain.</li><li>● % of recycled water on total production (kg/meters/units).</li><li>● % of yield on total raw material used in the year.</li><li>● % of by-products recovered for circular economy projects on total material used in the year.</li></ul>

MANUFACTURING OF FINISHED PRODUCTS		
	FACTS & FIGURES	RELATED INDUSTRY TAILORED KPIs suggested by the Monitor for Circular Fashion
 <p><i>“In 2020 we completed a new step in manufacturing traceability, fully tracing 90% of our semi-finished and finished product manufacturing (from yarn/fabric to final garment). All phases along the value chain are recorded in RFID labelling on the final product. In 2021-22 our area of interest will be to introduce and implement circularity principles within our manufacturing process.”</i></p> <p><b>DARIO CASALINI</b> CEO MAGLIFICIO PO SRL</p>	<p><b>70% of our wool is fully traced</b> (phases 1-17) and <b>90% of our cotton is traced</b> (phases 2-9) from 2020.</p> <p><b>90% of our production is fully traced</b> from raw materials to finished products through semi-finished products (fabric) from 2020.</p>	<ul style="list-style-type: none"><li>● % of traced kg/meters/units (on total number of kg/meters/units).</li><li>● Number of phases traced on the total production phases covered in the value chain.</li></ul>

LOGISTICS, WAREHOUSING AND TRANSPORTATION		
 <p><i>“Being truly sustainable is above all a cultural action, an act of knowledge. For decades, we have been educating the final user to act responsibly – buying less, choosing well and making it last. We carefully choose the materials and qualify our supply chains, by mapping and auditing them. We try to limit waste during development and production phases, activating circular processes for the reuse of leftovers and drastically reducing the products that we offer seasonally.”</i></p> <p><b>GIORGIO RAVASIO</b> COUNTRY MANAGER VIVIENNE WESTWOOD ITALY</p>	<b>FACTS &amp; FIGURES</b> <p>In 2020 Vivienne Westwood Srl offset a total of <b>110,021.20 kg CO<sub>2e</sub> of its shipments through GO-Green DHL Program.</b></p> <p>The company has implemented a logistic pilot project with Simpool Srl and its virtuous <b>GreenyPack pallet</b> made of polycoupled recycled materials, with the aim of including circularity principles and a rental model for its pallets management in its supply-chain. For the first year, this enabled the <b>saving of 304 traditional wooden pallets</b>, through the rental of 200 reusable ones.</p>	<b>RELATED INDUSTRY TAILORED KPIs</b> suggested by the Monitor for Circular Fashion <ul style="list-style-type: none"><li>● Measuring the CO<sub>2</sub> emission of the transportation in tons/ number of units produced.</li></ul>

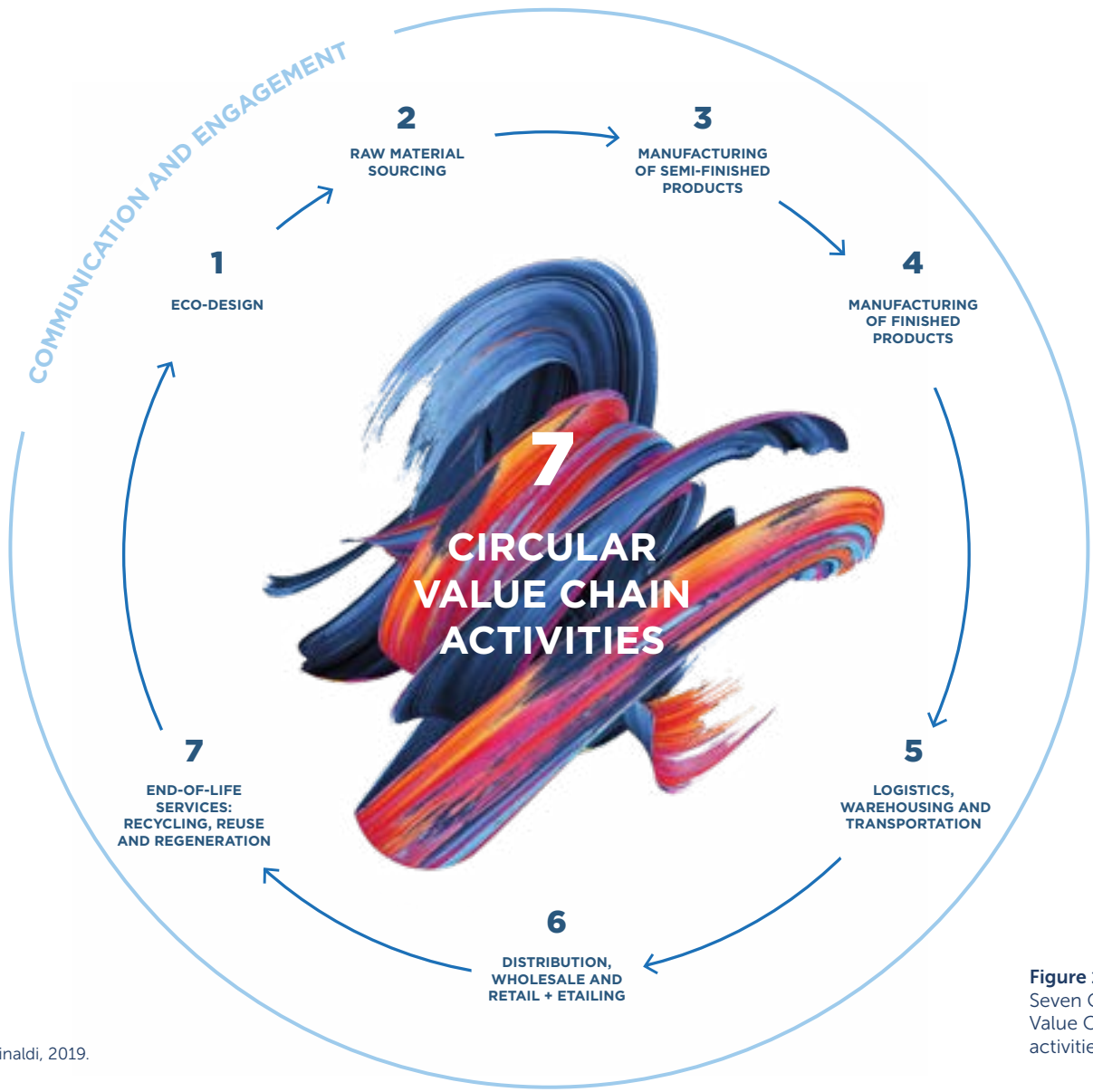
DISTRIBUTION, WHOLESALE AND RETAIL + ETAILING		
 <p><i>“We want to consider the impact of the whole lifecycle of our stores. That’s the reason why we decided to invest in a new store concept, which minimizes the impact in terms of use of resources and waste generation... We want to engage our consumers in a new business paradigm providing a used garments collection service in our stores which feeds new circular business processes.”</i></p> <p><b>SIMONE COLOMBO</b> OVS HEAD OF CORPORATE SUSTAINABILITY</p>	<b>FACTS &amp; FIGURES</b> <p>Our new store concept is designed with <b>95% recycled aluminium, 100% FSC wood and fully recyclable glass.</b></p> <p>Since 2013 we have activated the collecting of used clothing and <b>till 2020 we collected over 1.300 Tons of garments, avoiding their disposal in landfills.</b></p>	<b>RELATED INDUSTRY TAILORED KPIs</b> suggested by the Monitor for Circular Fashion <ul style="list-style-type: none"><li>● % of kg/meters/units with additional sustainability information on the products.</li><li>● % of collected kg/meters/ units.</li><li>● % of post-consumer waste per destination (reusing, repurposing, recycling, recycling, downcycling, landfill incineration, waste to energy).</li></ul>

END-OF-LIFE SERVICES: RECYCLING, REUSE AND REGENERATION		
 <p><i>“COREVA™ is just the start of what we hope to achieve through our R&amp;D at Candiani. Our long-term vision is a circular model built on the connection between industrial production and regenerative agriculture. We are fighting landfill and waste in a different way, in our own way. Our target is to close the loop, meaning that our fabrics (all the ingredients they are made of, and all the waste made during production) can be returned to nature.”</i></p> <p><b>ALBERTO CANDIANI</b> CANDIANI DENIM OWNER &amp; PRESIDENT</p>	<b>FACTS &amp; FIGURES</b> <p>COREVA™ was determined to be compostable according to the requirements of EU Standard EN13432 by accredited laboratory Innovhub in Milan.</p> <p><b>After 12 weeks, the sample weight decreased by 295 grams and disintegrated 98.1%, higher than the required test limit of 90%.</b> Subsequently, to assess for ecotoxicity, seed germination was tested.</p> <p><b>The results show +4.4% germination and +22.5% growth for seeds exposed to the COREVA™ compost compared to the reference compost.</b></p>	<b>RELATED INDUSTRY TAILORED KPIs</b> suggested by the Monitor for Circular Fashion <ul style="list-style-type: none"><li>● % of kg/meters/ units entirely made with biodegradable or compostable raw materials on total kg/meters/units.</li></ul>
 <p><i>“Recycling garments drastically extends the life of precious materials and produces fabrics that generally impact 75% less, according to our certified LCA calculation, all without missing on quality. In the past two years, there was an increased demand for recycled wool fabrics and more and more brands want to take part in our takeback programs to recycle their manufacturing offcuts.”</i></p> <p><b>MATTEO MANTELLASSI</b> PRINCIPAL CEO MANTECO S.p.A.</p>	<b>FACTS &amp; FIGURES</b> <p>In 2019, <b>35% of purchased raw material is recycled wool produced by pre- and post-consumer garments and out of 8 million meters of fabrics produced, 40% is made with it.</b></p>	<b>RELATED INDUSTRY TAILORED KPIs</b> suggested by the Monitor for Circular Fashion <ul style="list-style-type: none"><li>● % of by-products recovered for circular economy projects on total material used in the year.</li><li>● % pre-consumer waste volume on total material used in the year.</li><li>● % post-consumer waste volume on total material used in the year.</li></ul>



Communication towards all stakeholders is considered a key activity for circularity and is transversal to all activities of the Circular Fashion Value Chain. According to the companies of the Monitor for Circular Fashion, activating and engaging “final users”, is of utmost importance to accelerate the roadmap to circularity in fashion<sup>45</sup>.

Making clear circularity claims is needed in order to educate the final users and to provide relevant information to all stakeholders involved in the supply chain: as indicated above, the starting point is to be able to measure and assess circularity.



<sup>45</sup> Rinaldi, 2019.

# Point of view of the Monitor for Circular Fashion partners on EU Legislation on mandatory Due Diligence

By 2022 the European Union will adopt a mandatory Due Diligence Legislation that will provide at the European level a harmonized approach to prevent, mitigate and remedy human rights and environmental violations caused by business practices throughout their entire supply chains.

The companies of the Monitor for Circular Fashion identified the most relevant elements that the European Commission should consider while developing due diligence requirements to improve supply chain transparency and promote businesses' accountability. In particular, the results of the survey show the importance of strengthening traceability and transparency, using technological solutions and the need to apply due diligence requirements not only to businesses but also to their subsidiaries, sub-contractors and sub-suppliers.

Other essential aspects pointed out by the companies are associated with the stage of the supply chain, the sector of activity and the size of company, as well as the establishment of monitoring and enforcement mechanisms.

The companies of the Monitor for Circular Fashion believe that the core elements that should be considered by the new EU legislation on mandatory Due Diligence are the following:

- 1. transparency and traceability requirements;
- 2. applicability to the activities of subsidiaries, sub-contractors and sub-suppliers;
- 3. supply chain phases;
- 4. sector of activity;
- 5. technological solutions to support traceability in supply chains;
- 6. measuring the effectiveness of processes and measures through audits

- and communication of results;
- 7. company size;
- 8. monitoring and enforcement;
- 9. core elements guidance for companies, especially for SMEs and micro-enterprises;
- 10. severity and likelihood of risk;
- 11. training and capacity building;
- 12. grievance mechanisms;
- 13. civil and criminal liability.

Figure 13  
Seven Circular Value Chain activities.

## Point of view of the partners of the Monitor for Circular Fashion on the Italian Fashion System

The Companies of the Monitor for Circular Fashion were challenged to think about the Circular Value Chain Activities with the highest potential in order to make the Italian Fashion System more circular.

The results confirm that the Activities with the highest potential are as follows:

1. **“Eco-Design”, including R&D to implement Eco-Design principles;**
2. **“Raw material sourcing”;**

3. **“Manufacturing of semi-finished products”;**
4. **“Manufacturing of finished products”, including prototyping;**
5. **“End-of-life services”: recycling, reuse and regeneration.**

## 5.2 Guidelines to drive Managers' Actions

As a result of the desk analysis, SDA Bocconi and Enel X surveys, SDA Bocconi one-to-one interviews, and KPIs Committee point of views, the findings

below can be highlighted as industry guidelines to drive Managers' Actions (table 8).

### Managers' Actions to increase circularity performance

#### ► MEASURING AND ASSESSING CIRCULARITY

**Finding common KPIs is important to set priorities and targets, and to be able to compare results within the companies alongside other industry players. KPIs shall be selected on clear and long-term strategic objectives, in coherence with the brand identity.**

In order to increase their level of maturity and dissemination of the principles of

circular economy along their whole value chain, fashion companies need to adopt analysis and measurement tools, identifying solutions to begin and define a path towards sustainable and circular transition from linear to circular logic.

#### CORPORATE KPIs

- **Procurement:** in order to have greater control over their supply chain, companies should select their suppliers, classifying and qualifying them based on

specific sustainability criteria (e.g. % of recycled materials) which will then be integrated in a structured way within the purchasing procedures.

- **Production inputs:** optimizing the use of the input materials. This means intervening in the product design stage (modularity, durability, mono-materiality), to increase its recyclability/biodegradability within the post-consumption phase. This includes launching recovery/reuse of materials/components initia-

tives, both internally and externally to the company.

- **Production waste:** improve internal waste management in line with a circular approach, rethink the production processes, in order to enhance and reintegrate eventual process waste resources (materials, water, heat, steam, etc.), and consider better integration with suppliers and other potential partners.

- **Logistic and distribution:** a green transition requires the involvement of all production processes at a company level, including logistics and the movement of people and products. These have significant environmental impacts. Therefore, it is essential to adopt currently available more conscious solutions (e.g. inter-modal services) adopting also electric vehicles and consequently reduce CO<sub>2</sub> emissions, polluting gases and acoustic impact.

- **Sales and post-consumption:** companies can intervene in the entire lifecycle of the product, including the post-sales phase. It is possible to experiment with new and alternative business models, including the provision of a “clothing-service”, which can result in greater control over the garment by the manufacturer both during (product-as-a-service, rental, sharing, etc.) and after (repairation, remanufacturing, second-hand, etc.) the use phase.

- **CE Corporate approach:** sustainability and circular economy principles must

be increasingly integrated as strategic levers within industrial plans, as well as in communication and marketing activities. In fact, it is certainly important to involve customers, employees and suppliers in virtuous initiatives, but even more in setting concrete and measurable targets over time with clear objectives of decarbonization, materials, waste, water and energy management, etc.

#### ENERGY KPIs

The analysis conducted within the project has shown how, in relation to the energy consumption, a relevant decarbonization scenario can be envisaged. The overall consumption of the companies (about 416 GWh / year) is responsible for a total of 146,448 tCO<sub>2e</sub> emitted.

**By focusing on the electricity carrier and working on green supply policies and installation of renewable energy generation infrastructures, it would be possible to reduce current emissions by 30% (44,017 tCO<sub>2e</sub>).**

Taking into consideration the thermal consumption, responsible for about 25% of the current climate-altering emissions released into the atmosphere by companies, it would be desirable to act through two complementary paths:

1. Converting, where possible, traditional thermal plants with renewable systems (biogas or biomass boilers, solar thermal, etc.).

2. Triggering a process of electrification of energy systems that require the consumption of fossil fuel for their operation, in order to exploit the renewable potential of electric vectors.

- **Energy flows:** from the point of view of energy inputs consumed for production processes, there are many potential solutions to make the supply more sustainable and efficient. Some examples are: purchase of green energy from GO<sup>46</sup> or PPA<sup>47</sup> contracts, renewable self-production through installation or revamping of RES<sup>48</sup> plants, co-generation and trigeneration plants<sup>49</sup>, etc.

- **Energy efficiency:** decarbonization and electrification are the main drivers to make energy use more circular within production sites. It is possible to intervene by converting to high efficiency lighting systems, use of heat pumps for air conditioning (especially if associated with a heat recovery system), and the adoption of inverters that allow regulation of consumption even for low-efficiency machinery.

- **Energy management and enablers:** there are several technological solutions that allow to manage the consumption of energy systems in a virtuous way, including sensors and dimming systems<sup>50</sup>, consumption monitoring (i.e. EMS<sup>51</sup>), and regulation of HVAC<sup>52</sup> systems. In the last years, digitalization, IoT systems and artificial intelligence have also enabled new opportunities such as: -remote control

<sup>46</sup> Guarantees of Origin, instruments to certify the origin of electricity generated from renewable energy sources.

<sup>47</sup> Power Purchase Agreement, contract between two parties for the supply of renewable energy.

<sup>48</sup> Renewable Energy Sources.

<sup>49</sup> More efficient use of fuel or heat for electricity generation, because otherwise-wasted heat is recovered during the process.

<sup>50</sup> Automatic control and regulation of lighting systems functioning.

<sup>51</sup> Energy Monitoring System.

<sup>52</sup> Heating, Ventilation and Air Conditioning.



comfort management, automation in load management, demand response, etc. The creation of an infrastructure network dedicated to recharging electric vehicles could support the transition to green mobility as previously described in the “Logistic and distribution” area. In this specific case, the electrification of the corporate fleets could allow an average saving of 437,000 tCO<sub>2e</sub> thanks to a 100% green transition.

**Industry tailored KPIs** have been detailed in the Circular Fashion Manifesto. The specific commitments of the companies of the Monitor for Circular Fashion

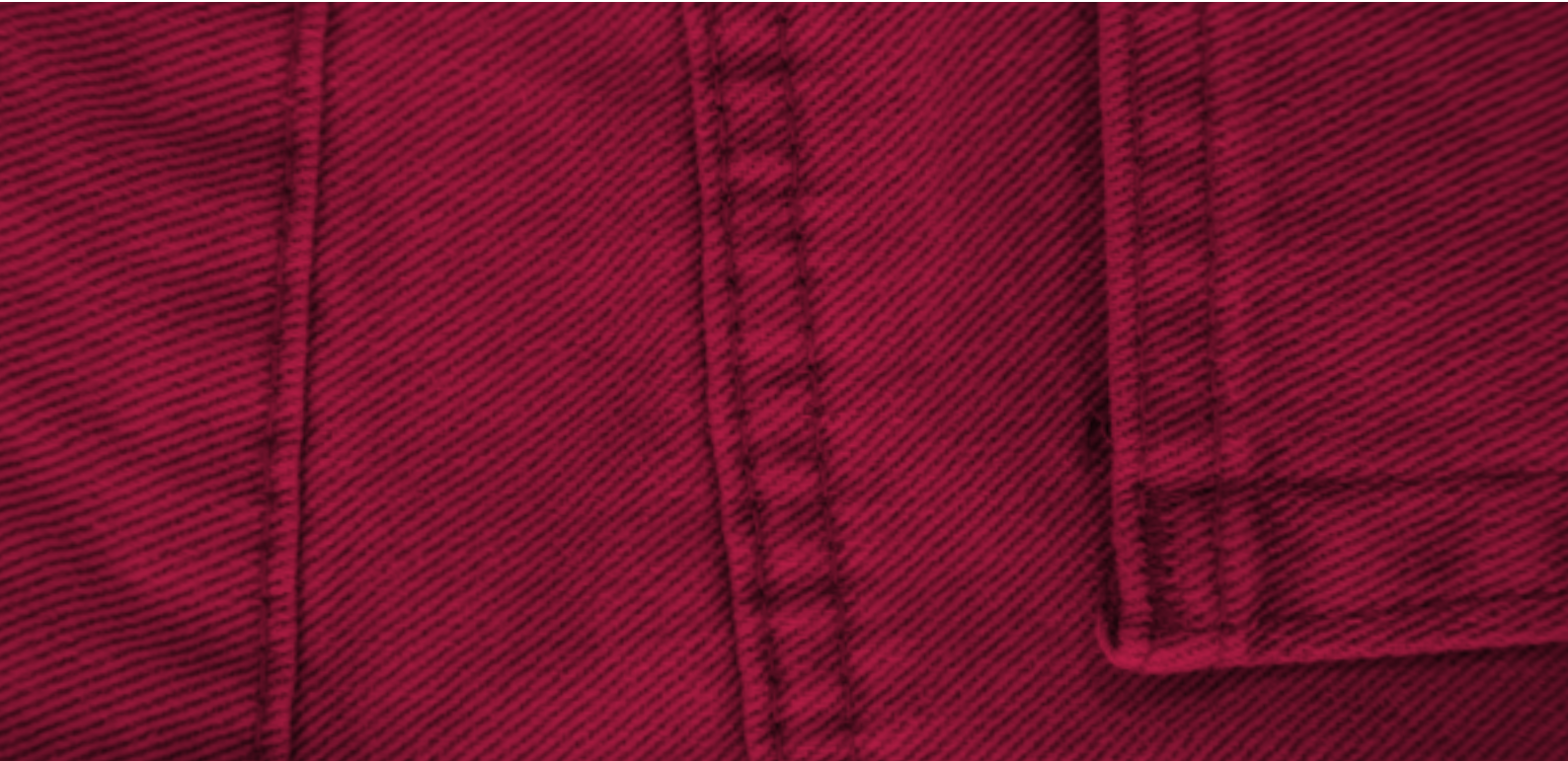
are detailed in table 8, along with suggested Actions, sample tools and the stakeholders involved.

► **ENGAGING FINAL CLIENTS/USERS IN CIRCULARITY INITIATIVES**

**In order to accelerate the transformation of the industry towards circularity it is important to involve the final clients/users along the Circular Fashion Value Chain, starting from educating the final clients/users on repairing their products, and bringing back the products in stores to start a**

**new cycle. A more effective communication with final clients/users through awareness and behavioral campaigns is needed in order to educate them to consume responsibly and extend the life of products.**

**Technologies may be considered as accelerators of these changes** (see table 8 with the main digital technologies for circularity in fashion).



**TABLE 8 - COMPANY COMMITMENTS OF THE MONITOR FOR CIRCULAR FASHION**

CIRCULAR VALUE CHAIN ACTIVITY	COMMITMENTS <sup>53</sup>	ACTIONS	SAMPLE TOOLS	MAIN STAKEHOLDERS INVOLVED
ECO-DESIGN	IMPLEMENTING ECO-DESIGN PRINCIPLES	Liaising with multi-stakeholder initiatives focused on eco-design.	Mapping of multi-stakeholder initiatives focused on eco-design.	- Companies - Policy Makers - Associations, Foundations and NGOs”
			Incentives.	
			Dedicated hubs/forums to promote diffusion of knowledge and best practices.	
RAW MATERIAL SOURCING	MEASURING TRACEABILITY	Measuring traceability by identifying clear and relevant KPIs.	KPIs to measure sustainability and circularity, including compilation guidelines.	- Companies - Technology and service providers - Policy makers
	INVESTING IN R&D	Increasing research on sustainable and circular materials.	R&D investments.	- Companies - Policy Makers - Academia - Technology and service providers - Investors
			ESG principles.	
			Platforms that connect all research centers and academia with innovative solutions and technologies for sustainable and circular fashion.	
			Platforms that connect SMEs and large companies to share knowledge on sustainable and circular fashion.	
			Platforms that connect service providers with companies for Open Innovation.	
			Incentives.	

<sup>53</sup> Each company will decide the timeframe for implementing the KPIs. Each company is committing to select as many KPIs as possible, according to their own business models and the activities of the value chain they are managing.

CIRCULAR VALUE CHAIN ACTIVITY	COMMITMENTS	ACTIONS	SAMPLE TOOLS	MAIN STAKEHOLDERS INVOLVED
RAW MATERIAL SOURCING	REDUCING WASTE	Reducing textile waste on total raw material.	Zero waste policies. Platforms that connect demand and supply of pre-consumer and postconsumer waste. Incentives.	- Companies - Policy Makers - Technology and service providers
MANUFACTURING ON SEMI-FINISHED PRODUCTS	PERFORMING RESPONSIBLE MANUFACTURING	Enhancing joint commitments on traceability.	Call to Actions on traceability and transparency such as The Sustainability Pledge. Legislation on traceability.	- Companies - IGOs and INGOs <sup>54</sup> - Academia - Associations, Foundations and NGOs - Technology and service providers
		Performing and providing training on responsible manufacturing.	Training on responsible manufacturing. Dedicated hubs/forums to promote diffusion of knowledge and best practices.	
	SUPPORTING SHARED AUDITS AND INTEROPERABILITY AMONG PLATFORMS	Supporting shared audits, to grant higher efficiency for suppliers and supporting interoperability among auditing platforms.	Shared audits.	- Companies - IGOs and INGOs <sup>55</sup> - Associations, Foundations and NGOs - Technology and service providers
TRANSPORT AND LOGISTICS	ACHIEVING DECARBONIZATION	Adopting recommended methodologies to measure data related to transportation in order to achieve decarbonization, starting from Scope 1.	Scope 1 calculated according to GHG Protocol and ISO 14064-1. Fleet Electrification analysis aimed at decarbonized mobility and logistic. Incentives.	- Companies - Policy Makers - Final users - Technology and services providers

<sup>54</sup> International governmental organizations (IGOs) and international non-governmental organizations (INGOs).

<sup>55</sup> International governmental organizations (IGOs) and international non-governmental organizations (INGOs).

CIRCULAR VALUE CHAIN ACTIVITY	COMMITMENTS	ACTIONS	SAMPLE TOOLS	MAIN STAKEHOLDERS INVOLVED
DISTRIBUTION AND RETAIL	EDUCATING FINAL USERS ON RESPONSIBLE CONSUMPTION	Engaging and educating final users on responsible consumption.	Behavioral campaigns. Mandatory public education on sustainability principles. Micro-influencers campaigns.	- Companies - Policy Makers - Communication agencies specializing in sustainability - Final users
	DEVELOPING RELIABLE SUSTAINABILITY CLAIMS	Respecting the guidelines on sustainability claims developed by UNECE.	Guidelines on sustainability claims. Legislation on sustainability claims. ESG principles. Dedicated hubs/forums to promote diffusion of knowledge and best practices.	- Companies - IGOs and INGOs - Policy Makers - Investors
END-OF-LIFE SERVICES	ENGAGING FINAL USERS TO EXTEND THE LIFE OF PRODUCTS	Engaging and educating final users to extend the life of products.	Behavioral campaigns. Mandatory public education on sustainability principles. Micro-influencers campaigns.	- Companies - Policy Makers - Communication agencies specialized on sustainability - Final users

Companies of the fashion industry are increasingly exploring circular business models, but recent reports confirm that “substantial investment and innovation are required before the industry can come close to achieving its circular ambitions”<sup>56</sup> and many barriers such as “regulatory, logistical, technical and economic complexities in textile col-

lection, recycling and quality and safety of input materials”<sup>57</sup> are still limiting the transformational change towards circularity. A higher level of transparency is needed on material use, overconsumption and waste, including the incineration of unsold goods and take-back schemes and reuse practices<sup>58</sup>.

**Managers’ Actions are not sufficient to go from a linear to a circular fashion model: some Joint industry and Policy Makers Actions are fundamental to a full-scale circular system.**

<sup>56</sup> Business of Fashion, 2021.

<sup>57</sup> Global Fashion Agenda, 2021.

<sup>58</sup> Fashion Revolution, 2021.



# Joint industry Actions to increase circularity performance

## ► INCREASE THE LEVEL OF TRACEABILITY AND TRANSPARENCY OF THE FASHION VALUE CHAINS:

traceability and transparency can be considered as enablers of sustainability and circularity. They require a joint industry action, supported by Policy Makers.

## ► ADDRESS CIRCULAR FASHION TRADE-OFF

As mentioned in this report, some obstacles are still to be considered, such as: costs, availability of technologies and infrastructure, external cultural obstacles, law and regulatory obstacles, availability of external and internal competencies, internal cultural obstacles and process inertia.

## ► SCALE-UP CIRCULARITY PILOT PROJECTS

Being able to measure and assess circularity and solving the circular fashion trade-offs in the short term will allow to scale-up circularity pilot projects in the medium-long term.

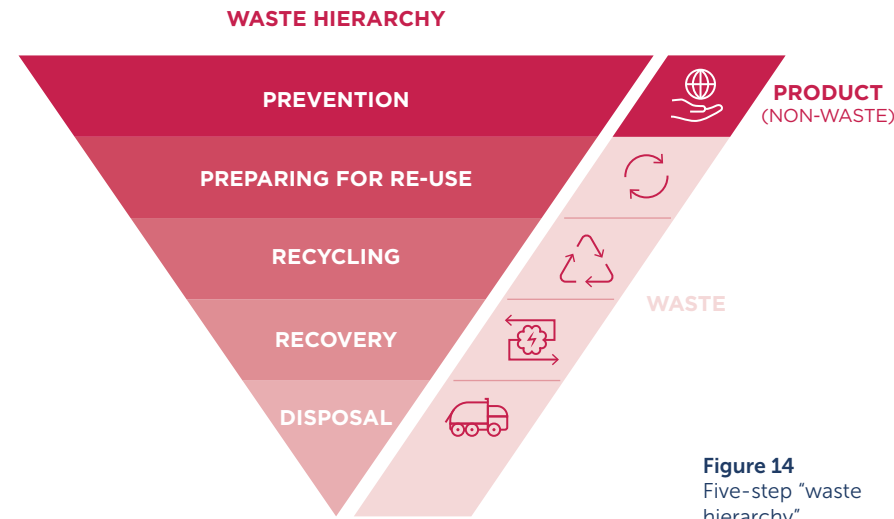
# Policy Makers Actions to increase circularity performance

## ► IMPROVE THE COLLECTION OF WASTE

## ► ACCELERATE THE INDUSTRIAL SYMBIOSIS

## ► DEVELOP HARMONIZED EU-WIDE END-OF-WASTE CRITERIA

The EU waste management is based on the five-step “waste hierarchy” (see figure 9), established in the Waste Framework Directive<sup>59</sup>. It establishes an order of preference for managing and disposing of waste. According to the Directive “preventing waste is the preferred option and sending waste to landfills should be the last resort”.



**Figure 14**  
Five-step “waste hierarchy”.

<sup>59</sup> EU Directive 2008/98/EC on waste amended by EU Directive 2018/851 [https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive\\_en](https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en)

The open dialogue with the companies of the Monitor for Circular Fashion generated several ideas to take concrete actions to accelerate the transformational change towards a more sustainable and circular fashion industry.

In a nutshell, according with the Monitor for Circular Fashion, companies of the Fashion Industry could consider the following activities in their roadmap to circularity.

## Urgent Managers’ Actions to increase circularity performance:

- measuring and assessing circularity, starting from the implementation of eco-design principles for durability, disassembly and recycling;
- engaging final clients/users in circularity initiatives.

## Managers’ Collaborative Actions to increase circularity performance:

- invest in R&D for technological innovations to solve the issues of quality and compliance with technical requirements of circular products;
- engage with policy makers to develop circularity infrastructure and to make the supply-chains more traceable in order to guarantee that final users will have access to information for conscious purchases and governments will be able to better regulate the sector, incentive schemes that start from a level playing field;
- work on collaborative projects among companies and with other stakeholders such as academia and technology providers to resolve circular fashion trade-offs and scale-up circularity pilot projects.

## Governments have an important role in:

- incentivizing the implementation of eco-design principles, the transportation of waste at global scale and R&D for circularity;
- supporting the development circularity infrastructures;
- supporting collaborative and multistakeholders projects to tackle waste;
- “implementing measures to ensure the uptake of waste and to boost the sorting, re-use and recycling of textiles, both through innovation and EPR<sup>60</sup>”;
- enhancing transparency and traceability for sustainability and circularity garment and footwear.

<sup>60</sup> Global Fashion Agenda, 2021.



## 5.3 Monitor for Circular Fashion: next steps

During the first year of activities, the Monitor for Circular Fashion reached the following main goals:

- map and analyse the fashion industry dynamics and circularity trends in the next five years;
- examine how these trends and the 2030 Agenda will affect business models;
- identify circular fashion KPIs and suggest a circular path for each business model;
- define requirements to evaluate the scale-up of circularity projects;
- create the Italian Community for Circular Fashion;
- produce the “Circular Fashion Manifesto” and an annual Report to be presented to companies and industry associations, institutions and other key stakeholders.

During the next months and years the Monitor for Circular Fashion aims also to:

- enhance traceability and transparency for circularity, through the development of sustainability claims at a B2B and B2C level;
- encourage Governments to adopt a harmonized policy framework to support circular fashion initiatives;
- inspire the fashion industry through our mission, values and actions and lead the way for all stakeholders to a sustainable and circular future.

By involving a higher sample of ingredient brands, brands & retailers from textile, garment and accessories value chains, new service providers representing all relevant technologies to create a circularity ecosystem we intend to increase the level of representation of the Monitor for Circular Fashion. New geographies will be explored.

As Partners, the companies of the Monitor for Circular Fashion will:

- monitor their circularity performance by testing the industry tailored KPIs;
- implement the industry tailored KPIs in pilot projects;
- contribute to define the fashion industry Best Available Techniques (BAT) on circularity.

Finally, the Monitor for Circular Fashion has the important goal of involving and supporting circular fashion SMEs, especially small companies and startups, since they are the ones that can bring innovative solutions to challenges like the climate crisis, and help spread these solutions throughout Italy, Europe and the World.

**During the next months and years the Monitor for Circular Fashion aims also to enhance traceability and transparency for circularity and encourage Governments to adopt a harmonized policy framework to support circular fashion initiatives.**

**A Managerial Agenda with concrete actions is needed to increase the circularity performance of each fashion company and the overall industry.**



# Annex

## Complete methodology

- 6.1 Desk research
- 6.2 Field research





## 6.1 Desk research

As first, a desk analysis was carried out to explore the current global scenario of circular fashion, the prevailing circular activities performed in the industry and the main related KPIs, the regulations that can support the transition toward circular production and consumption models, and the impacts

of Covid-19 on the fashion value chain. Information was collected from more than 30 reports published by consulting companies, NGOs, public and institutions.

## 6.2 Field research

Keeping in mind the collaborative perspective, which is at the very basis of the project, the following steps extensively involved the Monitor for Circular Fashion Partners and the KPIs Committee. To begin with, the SDA Bocconi Sustainability Lab Research Team designed an on-line survey, which was then shared with the Partners to validate the overall structure of the questionnaire as well as the investigated topics.

Once finalized, two specular surveys were distributed:

- the first, to brands and ingredient brands, who were asked to provide information on their own activities;
- the second, to services providers, who were asked to respond with regards to their client companies.

The respondents were also interviewed with one-to-one semi-structured interviews on the information they provided through the questionnaires. The survey results were finally analyzed through qualitative and quantitative methods.

As mentioned, the identification of the industry tailored KPIs, required three additional steps. At first, the KPIs Committee was consulted to review the KPIs emerging from the surveys; secondly, a Plenary meeting engaged the Monitor partners in a discussion to further refine the identified KPIs; lastly, the KPIs list was completed thanks to the support of the KPIs Committee including some guidelines for measuring.

The KPIs are under evaluation and will be tested in the coming months.

The identification of the industry tailored KPIs, required three additional steps.

1. The KPIs Committee was consulted to review the KPIs emerging from the surveys.
2. A Plenary meeting engaged the Monitor partners in a discussion to further refine the identified KPIs.
3. The KPIs list was completed thanks to the support of the KPIs Committee including some guidelines for measuring.

This Report is based on primary and secondary data, analyzed both through qualitative and quantitative methods.

The field analysis is based on two surveys and 14 one-to-one interviews to ingredient brands, brands & retailers and service providers representing the whole Circular Fashion Value Chain.



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Find upcoming information on the Monitor for Circular Fashion, watch for updates on the website: [sdabocconi.it/circularfashion](https://sdabocconi.it/circularfashion)

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