ANALYSIS OF CIRCULAR ECONOMY IMPLEMENTATION IN THE TEXTILE SECTOR AND ITS IMPACT ON ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

Raquel Mercedes GARCÍA REVILLA[1], Alina HAGIU[2]

[1] National Distance Education University, Faculty of Economics and Business Sciences, Spain
[2] National University of Science and Technology Politehnica Bucharest, Faculty of Economics and Law, Romania, mariana_alina.hagiu@upb.ro

Abstract: *The circular economy is a sustainable alternative to the traditional linear model, especially in sectors with high environmental impacts such as the textile industry. This article analyzes the implementation of circular economy principles in the textile sector, assessing the associated benefits and challenges. By reducing waste, reusing materials and recycling fibers, the textile sector can make a significant contribution to conserving natural resources, reducing carbon emissions and improving economic efficiency. The study proposes practical recommendations for fully integrating the circular economy into the sector and highlights its impact on economic and environmental sustainability.*

Key words*:* circular economy, sustainability, environment, green economy

JEL Classification Codes: F18, F43, Q53, Q56

1. INTRODUCTION

The textile industry, especially the fast fashion segment, is considered the second most polluting industry globally (European Parliament, 2020). It consumes 93 billion cubic meters of water annually and is responsible for about 10% of global greenhouse gas (GHG) emissions - more than air and maritime transport combined (UNEP, 2019).

Linear production and consumption patterns (production - use - disposal) generate more than 92 million tons of textile waste annually, of which only 1% is recycled into a similar product (Ellen MacArthur Foundation, 2021). These statistics underline the urgency of adopting a circular economy.

The circular economy, based on reuse, recycling and reducing resource consumption, offers a solution to combat these problems. This article explores how implementing the circular economy in the textile sector can improve economic and environmental sustainability.

Objectives of the study:

1. To identify circular practices implemented in the textile industry.
2. Assess their impact on economic and environmental sustainability.
3. To formulate recommendations for extending the circular economy in this sector.

To analyse the impact of the implementation of the circular economy in the textile sector on economic and environmental sustainability, this study uses a mixed-methods approach, combining quantitative and qualitative analysis. The aim is to understand not only the measurable outcomes of circularity, but also the context and systemic challenges influencing its implementation. The qualitative component was carried out in the form of a multiple case study,

focusing on four major players in the textile industry: the H&M Group, Patagonia, Inditex (Zara) and Adidas. The data we used in the analysis comes from official sustainability reports (2020-2023), as well as interviews and secondary analysis from academic literature. We selected these companies based on: public commitment to the circular economy, implementation of concrete programs (recycling, collection, repair), and availability of performance data.

As evaluation indicators we considered: textile waste reduction, water resource savings and impact on production costs and profitability.

2. THEORETICAL BACKGROUND

2.1. Definition of the circular economy

The circular economy aims to eliminate waste from production and consumption cycles by reusing materials, recycling resources and extending the life of products.

Circular economy means moving from a linear 'extract-produce-throw away' model to a 'reduce-reuse-recycle' system where products and materials extend their life cycle. The application of these principles in the textile industry implies:

Thus, the circular economy in the textile sector proposes a model based on:

- ✓ Redesign: Creating products that are easy to repair and recycle.
- ✓ Reuse: Introducing the concept of second-hand.
- ✓ Recycling: Transforming old fibers into raw materials for new products.

2.2. Economic impact of the circular transition in the textile sector

From our point of view the main benefits of the circular economy in the textile sector are:

- ✓ Long-term cost savings through reuse of materials.
- ✓ Access to new green markets and environmentally conscious consumers.
- ✓ Job creation in textile reconditioning and recycling.

The most important challenges of the circular economy in the textile sector are:

- ✓ High initial investment in circular infrastructure.
- ✓ Need for cross-sectoral collaboration.
- ✓ Insufficient regulation in some regions.

2.3. Environmental impacts

We consider that the application of circular economy can significantly reduce the negative impacts of the textile industry through:

- ✓ Reducing textile waste and the volume of products going to landfills.
- ✓ Reducing GHG (greenhouse gas) emissions by reusing fibers.
- ✓ Saving water and energy resources in the recycling process compared to initial production.

3. CIRCULAR ECONOMY IN THE TEXTILE INDUSTRY

3.1. Identification of circular practices implemented in the textile industry

In order to analyze the circular economy practices in the textile industry we analyzed the activity of some companies that we considered relevant in this sector, namely: H&M Group, Patagonia, Inditex and Adidas. The reasons why we have chosen these companies are:

- ✓ **H&M Group** is one of the largest fashion retail companies in the world and, at the same time, one of the most active players in the implementation of the circular economy in the textile industry. Since the 2010s, the group has set ambitious sustainability targets and is now integrating circular practices on a large scale into its global production, distribution and post-consumer supply chain.

- ✓ **Patagonia** is a true sustainability standard, approaching the circular economy from the perspective of product longevity, repair and reuse, with flagship initiatives such as Worn Wear and strong commitments to renewable materials.
- ✓ **Inditex**, through the Zara brand, is trying to transform the fast fashion model into a circular one through the "Join Life" initiative, the implementation of large textile waste collection systems and the development of a digital platform for traceability and recyclability**.**
- ✓ **Adidas** is innovating in the circular economy by creating fully recyclable products, such as Futurecraft.Loop, and by using only recycled polyester, combining sports performance with technological sustainability.

In the following we will analyze at the circular economy activty of these companies, grouped into a few main categories:

1. Collection and recycling programs

H&M was the first fashion company worldwide to implement a global used clothing collection program (since 2013). (H&M, 2022)

- ✓ In 2022, H&M collected approximately 20,000 tons of used textiles from its stores, including Romania.
- ✓ The program offers customers vouchers when they exchange old clothes, which are then sorted for reuse, mechanical recycling or energy processing.
- ✓ Quality textiles are resold (second-hand), damaged ones are recycled into new products or used in construction (insulation).

Patagonia is a recognized leader in the circular economy, thanks to its flagship Worn Wear program, launched in 2013. This program:

- ✓ Offers customers the opportunity to return old equipment;
- ✓ Refurbishes and resells used products in physical and online stores;
- ✓ Performed more than 100,000 repairs in 2022 at mobile centers and local workshops;
- ✓ Launched the "ReCrafted" service in 2023, which combines parts from multiple products to create new and unique items.

Since 2016, **Inditex** has launched an extensive collection system for used clothes in collaboration with charitable organizations (e.g. Cruz Roja, Caritas):

- ✓ Over 1,000 collection points in Zara stores in Europe and Asia;
- ✓ In 2021, the company collected over 18,000 tons of textiles for recycling, reuse or donation;
- ✓ Strategic collaborations with partners for chemical and regenerative fiber recycling.

Adidas has launched global initiatives to collect used footwear and sportswear, mainly in partnership with local retailers and NGOs:

- ✓ The Take-Back program is available in pilot stores in the US, Germany and Japan;
- ✓ Adidas collects used products and puts them into mechanical or chemical recycling cycles, with a focus on performance footwear;
- ✓ The collaboration with Parley for the Oceans aims to reuse ocean plastic in the production of sneakers and sportswear.

2. Ecodesign and circular innovation

H&M is constantly developing collections using circular design, with a focus on:

- ✓ Mono-component materials: items made exclusively from recyclable polyester to facilitate closed-chain recycling;
- ✓ Renewable natural fibers: GOTS certified organic cotton, hemp, lyocell, linen;
- ✓ Design for disassembly: easy to remove buttons and labels, recyclable seams.

H&M had a pilot project named Garment-to-Garment Recycling System – which supposes an installation in the H&M store in Stockholm that allows customers to see the recycling process of old clothes in real time. (Ellen MacArthur Foundation, 2021)

Patagonia applies eco-design principles from the concept stage:

- ✓ Use mono-materials that are easy to recycle (e.g. 100% recycled polyester);
- ✓ Create products that are easy to repair, with accessible zippers and seams;
- ✓ Introduces design for disassembly, facilitating end-of-life recycling;
- ✓ Invests in research for circular innovation, including bio-based fibers and renewable textiles.

The Join Life initiative is the pillar of circularity at **Inditex (Zara):**

- ✓ Join Life labeled products are made from certified sustainable materials such as TENCEL™, organic cotton or recycled polyester;
- ✓ By 2022, more than 50% of Zara's collections were Join Life labeled;
- ✓ Design aims to reduce water and energy consumption and create more sustainable products.

Adidas is a pioneer in the development of products entirely designed for circularity:

- ✓ The Futurecraft.Loop footwear line is made from 100% recyclable TPU and can be returned at the end of its life to be melted down and remanufactured;
- ✓ All components are thermally bonded without toxic adhesives for efficient recycling;
- ✓ In 2024, Adidas also launched its first range of fully recyclable mono-material jerseys.

3. Innovation in mixed-fiber recycling

From our point of view one of the biggest challenges in the textile circular economy is the recycling of mixed-fiber (e.g. cotton-polyester) clothing.

H&M has invested in technology partnerships such as:

- ✓ Re:newcell (Sweden) - transforms old cotton into "Circulose", a renewable raw material used in new clothes.
- ✓ Worn Again Technologies - develops chemical methods to separate mixed fibers and recover them.
- ✓ By 2022, over 20% of H&M's "Conscious" collection used materials produced by these emerging technologies. (H&M x Re:newcell, 2022)

Patagonia is among the few companies that:

- ✓ Widely uses recycled materials: over 87% of its products are made from recycled fibers (polyester, wool, cotton, nylon);
- ✓ Has almost completely replaced conventional cotton with organic cotton and hemp;
- ✓ Reduced carbon emissions in its supply chain by over 30% between 2015-2022;
- ✓ Aims for complete climate neutrality by 2025 (including indirect emissions).

Inditex applies advanced recycling and waste reduction practices:

- ✓ Achieved Zero Waste status in more than 80% of its stores and warehouses by the end of 2022;
- ✓ The complete elimination of single-use plastic in packaging is scheduled by 2025;
- ✓ Textile waste from internal processes is sent to certified recyclers.

Adidas has also implemented clear policies to reduce its dependence on virgin materials:

- ✓ By the end of 2024, Adidas has committed to using only recycled polyester in all its products;
- ✓ Between 2017 and 2022, the company reduced carbon emissions by 30% in its supply chain;
- ✓ Increased the use of certified sustainable cotton (Better Cotton Initiative).

4. Circular business models

H&M has launched a series of business experiments based on the circular model, including (Fashion For Good x H&M Report, 2021):

- ✓ "Conscious Exclusive" - a 100% sustainable premium collection made from recycled materials;
- ✓ Rental service in Berlin and Stockholm (in flagship stores);
- ✓ Repair program: local partnerships for stitching, zipper replacement, cleaning.

Patagonia, in addition to selling new products:

- ✓ Promotes the purchase of second-hand items on the official Worn Wear platform;
- ✓ Encourages free repairs, including offering tutorials and DIY (do-it-yourself) kits;
- ✓ Introduced rental initiatives for technical gear (climbing, hiking) in stores in the US and Europe.

Although a fast fashion retailer, **Inditex** is also adopting forms of operational circularity:

- ✓ It is testing rental and repair models in certain markets (France, UK);
- ✓ Offers collection and reuse of employee packing boxes and uniforms;
- ✓ Explores second-hand resale options in partnership with circular startups (e.g. CIRCULARITY GAP REPORT, 2023).

Adidas is exploring new forms of business based on circular principles:

- ✓ Testing subscription models for reusable footwear and leasing programs for sports equipment;
- ✓ Actively promotes reuse through limited collections made from recycled plastic collected from oceans or cities;
- ✓ Digital platforms for easy end-of-cycle product returns.

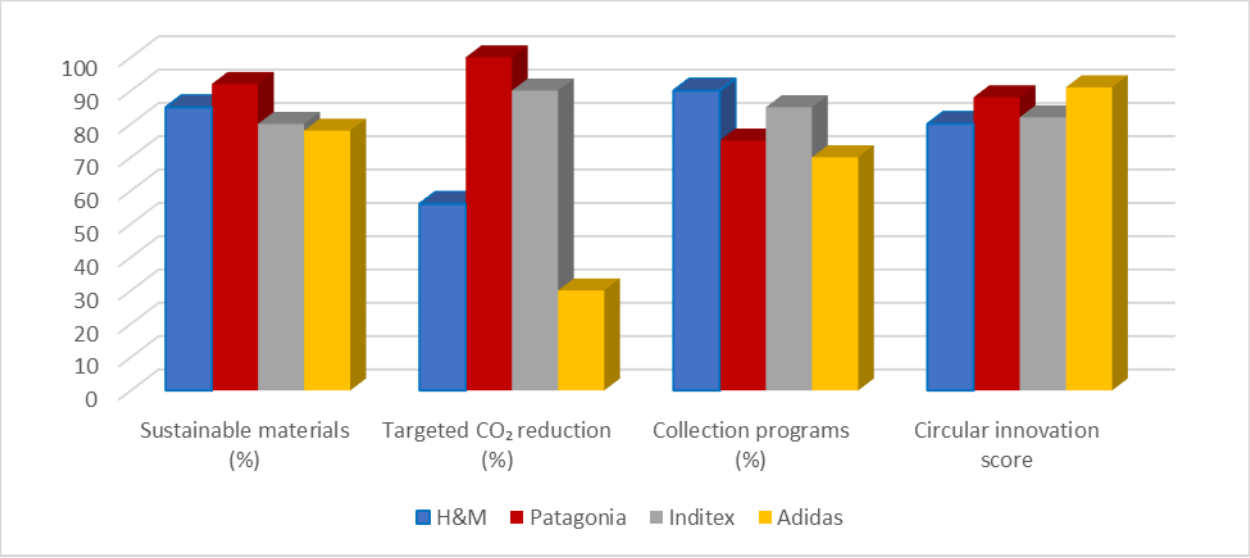

Figure no. 1 Comparison of circular performance between H&M, Patagonia, Inditex (Zara) and Adidas

Source: realized by the authors

The above graph provides a visual comparative analysis of the circular performance of four global leaders in the textile industry - H&M, Patagonia, Inditex (Zara) and Adidas - using four key indicators:

1. Sustainable materials (%). Patagonia leads the way, with 92% of its materials coming from recycled or regenerative sources, followed by H&M (85%). This reflects a clear move towards decarbonizing the supply chain.

2. CO_2 emission reduction targets (%). Patagonia commits to total neutrality (100%) by 2025, while H&M and Inditex target significant reductions of 56% and 90% by 2030-2040.

3. Coverage of collection programs (%). H&M has the most extensive global used clothing collection network (90%), while Adidas and Patagonia operate more specialized programs but with limited regional coverage.

4. Circular innovation score (0-100). Adidas excels in this area, notably with projects such as Futurecraft Loop - fully recyclable shoes. Patagonia follows closely behind with its automated Worn Wear system.

This analysis highlights how circular approaches can be tailored to each company's strategies and values, with tangible results both economically and environmentally.

3.2 Assessment of the impact of circular practices on economic and environmental sustainability

The assessment is structured along two dimensions: economic impact and environmental impact.

a. Economic impact

✓ Reduction of production costs through internal fiber recycling which can reduce costs by 10-20% (Teixeira et al., 2021). E.g. H&M reported savings of 15% on cotton purchases due to recycled materials in their collection program.

✓ Access to premium markets and segments through the 'Eco' products which can be sold at up to 30% higher prices and are perceived as premium (Amato et al., 2021). E.g. Patagonia sells refurbished products on its own platform with profit margins comparable to new products.

✓ Job creation. The circular economy creates local jobs in sorting, repair, reverse logistics (EU estimates: for every 1,000 tons of textiles reused, 20-35 jobs are created (EEA, 2023)).

b. Environmental impact

✓ Reduction of greenhouse gas emissions. In this regard we can say that polyester recycling leads to a 30-50% decrease in CO_2 emissions compared to virgin production (Gözet et al., 2023).

✓ Conserving water resources. Regarding this we can mention that textile recycling saves on average 93 liters of water/kg of fabric, especially for cotton (WRAP, 2022).

✓ Waste reduction through collecting and reconditioning clothes that can extends their lifespan by 2-3 years on average. In the EU, 87% of clothes are still landfilled or incinerated - the circular economy can reverse this trend.

3.3. Future targets in the field of the circular economy for the analyzed producers

1. H&M Group

H&M aims to become a global leader in the circular economy by adopting sustainable practices at every stage of the supply chain.

1. Major targets:

✓ 100% Sustainable materials: By 2030, H&M aims to use only recycled or sustainably sourced materials.

✓ Climate neutral: Reduce carbon emissions by 56% by 2030 and achieve climate neutrality by 2040.

✓ Full circular economy: Develop systems to turn all collected items into new products without material loss.

2. Key initiatives for the future:

✓ Develop technologies to enable mixed fiber recycling (e.g. cotton-polyester).

✓ Expand collection programs globally, including in emerging markets.

2. Patagonia

Patagonia focuses on expanding the circular economy through repair, reuse and reducing environmental impacts.

1. *Major targets:*

✓ Climate neutrality: Achieve carbon neutrality throughout the supply chain by 2025.
✓ Fully renewable products: Switch to 100% renewable materials by 2030.
✓ Emissions reduction: Reduce emissions from manufacturing by 50% through more efficient processes and materials.

2. *Key initiatives for the future:*

✓ Extend the Worn Wear program with the aim to double the number of reused products by 2030.
✓ Develop automated repair technologies to reduce time and associated costs.

3. Inditex (Zara)

Inditex aims to become one of the most sustainable fashion retailers by fully integrating the circular economy into its strategy.

1. *Major targets:*

✓ Plastic Elimination: Complete elimination of single-use plastic from packaging by 2025.
✓ Sustainable Products: Produce all items under the "Join Life" (sustainable) line by 2030.
✓ Zero Waste: Achieve zero waste status in all its factories and stores by 2025.

2. Key initiatives for the future:

✓ Develop a recycling ecosystem for all stores in the network.
✓ Create a global platform for product traceability and recyclability.

4. Adidas

Adidas focuses its efforts on technological innovations that reduce environmental impact and promote fully recyclable products.

1. *Major targets:*

✓ Exclusive use of recycled polyester: Complete switch to recycled polyester by 2024.
✓ Circular products: Launch a fully recyclable and reusable footwear line (Futurecraft Loop) for the entire range by 2030.
✓ Reduce carbon footprint: Reduce greenhouse gas emissions by 30% by 2030.

2. Key initiatives for the future:

✓ Expand partnership with Parley for the Oceans to increase the use of recycled ocean plastic.
✓ Develop a global return system for used footwear, turning it into raw material for new products.

Table no 1. Benchmarking circular economy targets at H&M, Patagonia, Inditex and Adidas

Manufacturer	Climate neutrality	Sustainable materials	Collection/recycling programs	Other circular innovations
H&M	Until 2040	100% by 2030	Global reach	Mixed fiber recycling
Patagonia	Until 2025	100% by 2030	Expanded "Worn Wear" Program	Automated repair technologies
Inditex	Until 2040	All "Join Life" items by 2030	Zero Waste in stores and factories	Full product traceability
Adidas	30% reduction by 2030	100% recycled polyester by 2024	Global Return Platform	Fully recyclable shoes (Futurecraft)

Source: made by the authors

3.4. Results

In this section we aim to summarize the main results obtained from the analysis of the leading companies in the textile industry in terms of implementing the circular economy. The results are organized along two dimensions: economic and environmental, followed by the common challenges identified.

A. We consider that the main *economic benefits* are:

1. Reduction in production costs. Companies that integrate recycled or renewable materials report a significant decrease in supply costs. For example, H&M, with its "Conscious Collection", has reduced cotton sourcing costs by 15% due to in-house recycling and contracts with sustainable suppliers (H&M Sustainability Report, 2022).

2. Increased demand for sustainable products. According to a study by Nielsen (2020), 67% of global consumers are willing to pay more for textiles that comply with ecological and ethical principles. This has led to a 20% increase in sales for Zara's Join Life line between 2020-2022 (Inditex Report, 2022).

3. Creating green jobs. The transition to a circular economy has led to the expansion of repair, recycling and reverse logistics departments. For example Patagonia estimates that the Worn Wear initiative has created over 1,000 new jobs in remanufacturing and repair centers in the US and Europe (Patagonia Environmental Report, 2022).

B. From our point of view the main *environmental benefits* of implementing circular economy in the textile sector are:

1. Reduction of textile waste. Data from Textile Exchange (2021) shows that collection and recycling programs run by major retailers contributed to a 25% decrease in textile waste sent to landfill in Europe in 2021. For example H&M collected 40,000 tons of clothes in that year alone.

2. Reducing water consumption and emissions. Recycling fibers instead of using virgin fibers brings significant savings such as 93 liters of water/kg recycled textile (WRAP, 2022) or a 20% reduction in CO_2 emissions per unit produced. For example Adidas, by using recycled polyester and working with Parley for the Oceans, avoided 3,000 tons of CO_2 in 2022 (Adidas Sustainability Report, 2022).

C. We consider that the most important *challenges* facing the companies analyzed are:

1. High upfront costs. Implementing advanced recycling technologies (such as cotton-polyester blended fiber separation) requires investments in the order of tens of millions of euros. For example Adidas and H&M have invested more than €100 million cumulatively between 2018 and 2022 in textile recycling R&D.

2. Insufficient infrastructure. In many regions, there are no public or private systems for efficient textile collection, which limits the scalability of initiatives. Thus, we identified that in Eastern Europe, the collection rate of used clothing is below 20%, compared to

3.5. Formulation of recommendations for expanding the circular economy in the textile industry

Based on academic literature, international examples and local initiatives (Romania), we have formulated a set of strategic recommendations that can guide an effective transition to the circular economy in the textile sector. We structured these recommendations on four levels of action: industry, government, consumer and partnerships.

a. Recommendations for companies and producers

1. Integrate circularity into the business model by adopting the "design for circularity" model using products that are easy to dismantle, repair, recycle, investing in in-house recycling for post-industrial and post-consumer waste, and expanding in-store and online textile collection programs.

2. Digitization and traceability by implementing digital tagging (QR/NFC) with information on material composition, lifecycle and recycling instructions and tracking and optimizing material flows through blockchain or circular ERP platforms and through educating employees and collaborators through training in ecodesign, recycling, repair but also by involving suppliers in sustainability standards (GOTS, OEKO-TEX, ISO 14001 certifications).

b. Recommendations for public authorities and legislators

1. Regulation and fiscal incentives by introducing a clear legal framework for textile waste management (separate collection obligation - already foreseen in the EU for 2025), subsidies and tax deductions for companies investing in green technology, recycling and remanufacturing and penalties for incineration of unsold clothes or import of poor quality second-hand clothes (dumping).

2. Funding and partnerships through the creation of dedicated funds for circular innovation in textiles (including for SMEs and NGOs) and support for regional recycling and remanufacturing hubs through NRRP or European funds (e.g. FabLab/Repair Café type centers).

c. Recommendations for consumers

1. Education for responsible consumption through public and school campaigns on the "true cost of fashion" - water, emissions, microplastics and guides for choosing sustainable clothes, their maintenance and proper recycling.

2. Facilitate sustainable choices through vouchers for returning old clothes and shops or platforms that offer clear options for rental, repair or resale.

d. Recommendations for cross-sectoral collaboration

1. Create circular alliances through coalitions of companies + researchers + NGOs to test scalable circular solutions as well as through partnerships with technical and design universities to develop new materials and technologies (e.g. compostable textiles, chemical recycling enzymes).

2. Transparency and open data utilizing the development of public databases on textile flows, recyclers, environmental impact per product and engaging green tech startups in circular infrastructure (automated sorting, AI in sorting etc.).

4. CONCLUSIONS

Implementing the circular economy in the textile sector represents a significant opportunity to reduce negative environmental impacts and increase economic sustainability. While barriers such as upfront costs and insufficient infrastructure exist, collaboration between governments, companies and consumers can accelerate the transition. The study emphasizes the need for public policy development and investment in advanced recycling technologies.

H&M demonstrates that mainstreaming the circular economy is not only a moral responsibility but also a strategic opportunity. Through efficient collection, material innovation and business model redesign, the company:

- Reduces costs and dependence on virgin resources;
- Attracts consumers concerned about sustainability;
- Becomes a leader in the transition to regenerative fashion.

However, the real impact of these initiatives depends on scaling, transparency and systemic cooperation - with suppliers, customers and governments.

Patagonia proves that the circular economy is possible even in a competitive sector like outdoor. Through innovation, environmental honesty and genuine customer engagement, the company has turned circularity into a workable and replicable business model. Unlike fast fashion, Patagonia offers a genuine example of applied sustainability with visible economic, social and environmental impacts.

Inditex takes a systemic and scalable approach to the circular economy. Although its business model is different from that of slow-fashion companies, the integration of circularity into its design, production and logistics processes shows real commitment. The Join Life initiative provides a framework for transforming fast fashion towards sustainability, and digitizing traceability is an important step towards transparency and trust.

Adidas focuses on cutting-edge technological innovations to reduce environmental impact and create fully circular products. Unlike other brands, Adidas approaches circularity from a technological and sporty perspective, with a focus on mono-materials, functional design and scalability. Its model shows that circularity can also be integrated into the sports performance segment without aesthetic or functional compromises.

Each of these manufacturers adopts specific strategies to integrate the circular economy into their operations. While the approaches differ, the common goal is to reduce environmental impact and increase economic sustainability. The targets set, such as climate neutrality and the use of sustainable materials, indicate a strong commitment by these companies to the future of the circular economy.

REFERENCES

1. Adidas Sustainability Strategy, 2022, available at: https://www.adidas-group.com/en/sustainability/
2. Adidas Annual Report, 2023, available at: https://report.adidas-group.com/2023/en/
3. Adidas Sustainability Statement, 2024, available at: https://report.adidas-group.com/2024/en/group-management-report-sustainability-statement/esrs-2-general-disclosures/overview.html?
4. Ellen MacArthur Foundation. (2021). The Circular Economy in Detail, available at: https://ellenmacarthurfoundation.org
5. European Commission. (2015). Closing the Loop: An EU Action Plan for the Circular Economy. https://eur-lex.europa.eu
6. Fashion for Good. (2021) Sorting For Circularity Europe - Fashion for Good, available at: https://www.fashionforgood.com/case-study/sorting-for-circularity-europe-an-evaluation-and-commercial-assessment-of-textile-waste-across-europe/
7. H&M Sustainability Report, 2023, available at: https://hmgroup.com/wp-content/uploads/2024/03/HM-Group-Annual-and-Sustainability-Report-2023.pdf
8. H&M x Re:newcell, 2022, Partnership Progress Report.
9. Inditex Annual Report, 2022, available at: https://www.inditex.com/en/investors/investor-relations/annual-reports
10. Nielsen. (2020). The Rise of Sustainable Consumerism, available at: https://www.nielsen.com
11. Patagonia Environmental Initiatives, 2022, available at: https://www.patagonia.com/our-footprint/
12. Silobrit Ingrida & Jureviciene Daiva, 2023. Assessing Circular Textile Industry Development, Economics and Culture, Sciendo, vol. 20(1), pages 55-67, June.
13. Textile Exchange. (2021). Preferred Fiber and Materials Market Report, available at: https://textileexchange.org
14. WRAP. (2022). Valuing Our Clothes, available at https://wrap.org.uk
15. https://www.inditex.com/itxcomweb/ro/en/sustainability#reporting
16. https://www.patagonia.com/one-percent-for-the-planet.html
17. https://wornwear.patagonia.com
18. https://hmgroup.com/sustainability/circularity-and-climate/
19. https://hmgroup.com/sustainability/leading-the-change/green-investment/
20. https://hmgroup.com/sustainability/