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W4TEX women textile

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W4TEX: Strengthening Women's Representation in Senior Textile Positions

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W4TEX women textile

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INTRODUCTION

Rooted in Europe's economic and cultural heritage, the textile and garment industry has long been a symbol of quality, innovation, and craftsmanship. However, this legacy is under growing pressure due to rising production costs, making it increasingly difficult for manufacturers to compete with lower-cost regions. Simultaneously, evolving consumer preferences (driven by digitalisation, fast fashion, and demand for personalised products) are reshaping market dynamics. Perhaps the most pressing challenge is the need for greater sustainability in both textile processing and garment production, as companies must adapt to stricter regulations, environmental concerns, and ethical sourcing requirements.

In response, European textile businesses are investing, facing challenges, in advanced manufacturing technologies, digital transformation, and eco-friendly materials to improve production while reducing environmental impact. The adoption of circular economic principles has become essential, particularly for small and medium-sized enterprises (SMEs) striving to align with evolving EU green policies. These shifts are not only necessary to comply with stricter regulations but also to meet growing consumer expectations for more sustainable processing methods and ethical garment manufacturing.

As the sector undergoes this transformation, it is increasingly aligning with global sustainability goals and certifications. These frameworks set ambitious but challenging targets for reducing environmental impact in textile processing and garment production while fostering economic resilience and social responsibility. By integrating sustainability, innovation, and ethical practices throughout the entire production chain, the European textile productive industry is working toward a more resilient and future-proof model that balances tradition with the demands of a rapidly changing global market.

RISING PRODUCTION COSTS

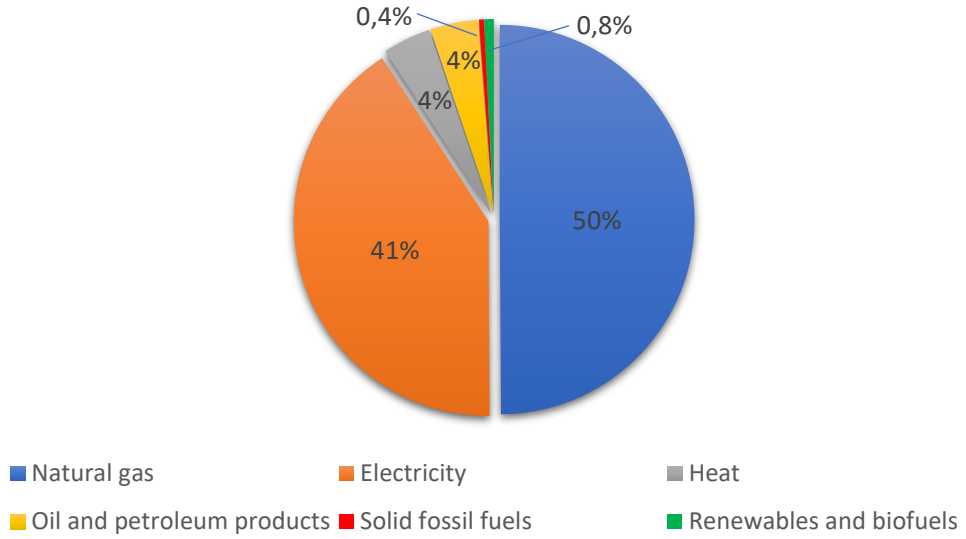
Rising Key Production Costs in the European Textile and Garment Industry: Challenges and Implications

European textile and garment production has been grappling with a steady increase in production costs in recent years, driven by a complex combination of economic, environmental, regulatory and geopolitical factors. This escalating financial burden poses a serious threat to the competitiveness and sustainability of the sector, with small and medium-sized enterprises (SMEs) facing the greatest challenges. Unlike large corporations with more financial flexibility and access to resources, SMEs often struggle to absorb rising expenses, making it increasingly difficult for them to sustain operations, invest in innovation, and remain competitive in both domestic and international markets.

Energy Costs and Their Impact on SMEs

One of the primary cost drivers affecting the industry is the sharp rise in energy prices. Many textile manufacturing processes—such as weaving, dyeing, finishing, and drying—are highly energy-intensive, requiring substantial electricity and gas consumption. These processes not only contribute significantly to the operational costs but also impact the overall competitiveness of companies in the global market. With ongoing fluctuations in energy markets, SMEs, which operate on tighter profit margins and often lack the financial buffer to absorb rising costs, find themselves disproportionately affected. Unlike larger manufacturers, who have more leverage to negotiate better energy contracts or invest in long-term energy efficiency measures such as renewable energy systems or advanced automation, smaller businesses are left with fewer options. This disparity creates a significant **imbalance**, whereas the operational and production costs of SMEs increase at a faster rate, putting them at a **competitive disadvantage**. For many small businesses, these rising energy costs not only erode profitability but also lead to difficult decisions regarding production efficiency and workforce retention. To cope with escalating energy bills, some businesses may be forced to reduce production, scale back on staff, or delay investments in innovation and technology. Moreover, the unpredictability of energy prices creates a climate of uncertainty, making it even more challenging for SMEs to **plan for the future or stay resilient in a volatile market**. As energy prices continue to climb, the survival of many small textile manufacturers may depend on finding ways to minimize energy consumption, innovate in production processes, and explore alternative solutions to remain viable in an increasingly competitive and resource-constrained market.

Figure 1: Energy consumption in the textile clothing, leather and footwear sector, by fuels.



Source: EURATEX (2022). *Facts & Key Figures 2022 of the European Textile and Clothing Industry.* EURATEX. Retrieved from https://euratex.eu/

As we see, natural gas accounts for half of the energy resources in the textile industry. Following the recommendations of various European institutions and private certifications, the *"Green transition requires considerable innovation and investment"*[1]. This represents a significant investment in energy resources for SMEs, which, in addition to this resource, have had to face the transition to renewable energy sources, as mentioned in this document.

Labour Costs and Workforce Retention

Labour costs in Europe have been steadily increasing due to stronger labour protections, wage growth, and social security requirements. While ensuring fair wages and better working conditions remains a priority for the industry, these rising expenses put additional economic pressure on SMEs, which often operate with limited financial buffers. Unlike larger companies that can distribute labour costs more efficiently across larger production volumes or regional operations, SMEs must carefully balance maintaining a **skilled workforce while managing payroll expenses**. Many smaller manufacturers struggle to compete with larger corporations that can afford higher wages, more comprehensive benefits packages, and enhanced worker incentives. As a result, SMEs face significant challenges in attracting and retaining skilled labour, which is essential for maintaining production quality and efficiency. This, in turn, leads to skilled labour shortages, increasing turnover rates, and difficulties in workforce

[1] **EURATEX (2022).** *Facts & Key Figures 2022 of the European Textile and Clothing Industry.* EURATEX. Retrieved from https://euratex.eu/

retention, which can directly impact the productivity and competitiveness of smaller manufacturers.

Moreover, the labour-intensive nature of textile and garment production—ranging from manual processes like stitching and embroidery to technical tasks such as quality control and machine operation—requires a **highly trained and experienced workforce**. With the increasing cost of labour, SMEs in the textile sector often find it difficult to justify investing in training programs, further compounding the issue of skill gaps within their workforce. These rising labour costs also limit their **ability to adopt automation technologies**, which could reduce dependence on human labour and improve production efficiency. For smaller manufacturers, this combination of high labour expenses and a shrinking skilled labour pool makes it challenging to maintain profitability while meeting the rising demand for high-quality products. Consequently, many smaller businesses are forced to make difficult decisions, such as reducing production volumes, outsourcing labour to countries with lower labour costs, or even scaling back on product lines. The balance between managing labour costs and establishing a skilled and satisfied workforce is becoming **increasingly precarious**, particularly as the global competition for textile and garment production intensifies.

Environmental Regulations and Compliance Costs

Stringent environmental regulations aimed at reducing the textile industry's ecological footprint have introduced additional financial burdens, particularly for SMEs (as it is developed in the next points). While sustainability initiatives such as waste reduction, chemical management, and emissions controls are necessary for long-term environmental benefits, compliance requires significant investment in new technologies, cleaner production methods, and certifications. Larger firms may have the capital to adapt quickly, but SMEs often face a lack of access to affordable financing for these necessary transitions. As a result, many small businesses struggle to meet regulatory requirements during the production process, putting them at risk of fines, operational restrictions, or even business closures.

In the industry as a whole, the textile sector has reduced its GHG emission intensity between 2015 and 2019, as the positive change in value added is larger than the change in GHG emissions[2].

The pressure of keeping up with technological advancements and digitalisation

The push toward digitalisation and automation in textile manufacturing presents both opportunities and challenges. On the one hand, adopting smart production methods, automated machinery, and data-driven decision-making can significantly enhance operational efficiency, improve product quality, and reduce waste. Technologies such as Internet of Things (IoT) sensors, robotic automation, and predictive analytics can streamline production lines, minimise downtime, and optimise resource usage, leading to cost savings and increased competitiveness. By integrating digital technologies,

[2] **European Commission. (2022).** *Annual Single Market Report 2022.* European Commission. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0660

manufacturers can respond faster to **market changes, personalise product offerings and improve inventory management**, all of which are vital in today's fast-paced and demand-driven marketplace. Additionally, automation can help address labour shortages by reducing reliance on manual processes, enabling companies to maintain production even in the face of workforce constraints.

However, the initial investment required for these technologies is often **out of reach for SMEs**. Unlike large multinational corporations with dedicated research and development budgets, small manufacturers frequently lack the financial capacity to integrate advanced systems. The cost of acquiring, installing, and maintaining cutting-edge machinery or implementing complex software solutions can be prohibitively expensive for smaller businesses, particularly when these technologies require skilled personnel for operation and maintenance. Furthermore, the digital transformation process often involves not just the purchase of equipment but also significant changes to **existing workflows, employee training, and ongoing system updates**, all of which require additional investment. This **technological gap** further widens the competitive divide between industry leaders and smaller players, making it harder for SMEs to keep pace with evolving market demands. As larger companies embrace digitalization and automation, they benefit from enhanced scalability, more efficient production, and the ability to meet consumer expectations for faster, more customized products. In contrast, **SMEs may struggle to maintain their market share, falling behind in terms of innovation, cost efficiency, and responsiveness**. For many small manufacturers, the rapid pace of technological change creates a daunting challenge, forcing them to **either innovate within their limited means or risk becoming obsolete in an increasingly digital world**.

Supply Chain Volatility and Rising Material Costs

Disruptions in global supply chains, combined with inflationary pressures, have led to increased costs for essential production inputs such as textiles, chemicals, and packaging materials, which affects the textile production. These price hikes are exacerbated by **logistics challenges**, shortages of **key components**, and rising energy costs, which further **inflate production expenses**. SMEs, with less negotiating power and purchasing volume than larger corporations, often **face higher prices** for raw materials and longer lead times for critical supplies. Unlike their larger counterparts, small manufacturers lack the leverage to secure bulk discounts or preferential treatment from suppliers, putting them at a disadvantage in a highly competitive market. Additionally, unexpected disruptions —such as **geopolitical tensions, trade barriers, or economic downturns**— make it even more challenging for small manufacturers to plan effectively and adjust their strategies. These unforeseen events can lead to sudden changes in demand or further disruptions in the availability of critical resources. Without the financial cushioning that larger companies possess, SMEs are often forced to absorb these additional costs, leading to reduced profit margins and operational instability. The impact of these supply chain disruptions can also cause delays in fulfilling customer orders, resulting in reputational damage and a loss of business. For many small manufacturers, navigating this volatile landscape requires not only financial resilience but also the **ability to adapt quickly** and **find alternative suppliers or production methods** to maintain operations.

Addressing the Challenges for SMEs

While the European textile and garment industry remains a significant contributor to the economy, the rising costs associated with production, such as energy, labor, regulatory compliance, and supply chain disruptions create a particularly precarious situation for SMEs. To mitigate these challenges, it is essential for policymakers and industry stakeholders to develop targeted support measures like:

1	Access to **affordable financing** to help SMEs invest in energy-efficient technologies and sustainable production methods.	Example: A small textile manufacturer secures a low-interest government loan to upgrade its machinery with energy-efficient equipment. This investment allows the company to reduce its electricity consumption by 30%, lowering production costs and improving competitiveness.
2	Support for workforce development programs, such as the **European Pact for Skills**, to equip employees with the skills needed to operate in a more automated and digitalised industry.	Example: A family-run garment factory enrolls its workers in a training program under the European Pact for Skills. Employees learn how to operate automated sewing machines and use digital design software, increasing productivity and reducing human error.
3	Financial incentives or subsidies for SMEs transitioning to **greener production** practices to comply with environmental regulations without excessive financial strain.	Example: A textile SME receives a government grant to install water-recycling technology in its dyeing process. This reduces water consumption by 40% and helps the company comply with new EU environmental regulations without excessive financial burden.
4	Enhanced **industry collaboration** to improve supply chain resilience and reduce dependency on external suppliers.	Example: Several small textile producers form a cooperative to jointly source raw materials from local suppliers, reducing dependency on North American imports. This collaboration ensures a stable supply chain and helps mitigate disruptions caused by international shipping delays.

The **rising production costs,** as mentioned before, in the European textile and garment sector are reshaping the industry's economic landscape, with SMEs facing the most severe consequences. Without adequate support mechanisms, many SMEs risk being pushed out of the market, leading to job losses and a weakened industry overall. Addressing these financial pressures through strategic policy interventions and industry collaboration will be essential to ensuring a **resilient and competitive European textile** sector for the future.

TEXTILE COMPANIES' PRODUCTION IN THE CONTEXT OF GREEN AGREEMENTS AND CERTIFICATIONS

Textile processing is one of the foundations of garment production, involving multiple complex and resource-intensive stages. These include fiber production, spinning, weaving or knitting, dyeing, finishing, and garment manufacturing. Each stage requires significant input, including energy, water, and chemicals, all of which contribute to the environmental footprint of the textile and fashion industry. While European manufacturers have leveraged technological advancements to improve efficiency and reduce emissions, the industry remains one of the largest contributors to pollution globally. Therefore, various public and private organizations have established a range of agreements, initiatives, and certifications. Among the most relevant and closely related to textile and garment production are those outlined in the following sections.

European Green Deal, CEAP and Textile Sector

European Green Deal

The European Green Deal, launched in 2019, is the EU's ambitious strategy to make Europe *the first climate-neutral continent by 2050*[3]. This initiative directly impacts the textile industry, as it requires businesses to drastically reduce their carbon footprint, transition toward clean energy, and adopt **sustainable production methods**. The strategy includes stringent regulations on waste management, resource efficiency, and pollution control, pushing the industry to innovate and restructure its production systems.

The European Green Deal presents both **challenges and opportunities for textile production**. Companies must adopt sustainable technologies like waterless dyeing, bio-based fibers, and recycling systems while exploring business models However, SMEs face barriers due to **high costs** and the **complexity of integrating these systems**.

With limited budgets and resources, **SMEs struggle to comply with EU regulations while staying competitive**. Navigating these challenges requires balancing sustainability goals with financial stability under the European Green Deal and 2030 Agenda.

Circular Economy Action Plan (CEAP)

Closely linked to the European Green Deal, the **Circular Economy Action Plan (CEAP)**[4] is a comprehensive strategy designed to shift industries away from **linear**

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[3] **European Commission. (n.d.).** *European Green Deal*. European Commission. Retrieved from: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

[4] **European Commission. (n.d.).** *Circular economy action plan*. European Commission. Retrieved from: https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

production models and toward circularity, where products are reused, repaired, and recycled rather than discarded. The textile sector is one of the primary focus areas of this action plan, given its high levels of waste and resource consumption.

For garment production, the CEAP introduces specific measures to **increase textile longevity** and **enhance recycling infrastructure**. This includes **mandatory sustainability labeling** on textiles to provide consumers with transparent information about a garment's environmental impact, such as its water footprint, carbon emissions, and recyclability.

2030 Agenda and Sustainable Development Goals

The **2030 Agenda for Sustainable Development**, adopted by all United Nations Member States in 2015, serves as a universal framework for addressing global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice. Central to this agenda are the **17 Sustainable Development Goals (SDGs)**, which provide a blueprint for action across all sectors.

For Europe's textile and garment production industry, the SDGs offer both a guide and a **challenge to create more sustainable, ethical, and inclusive practices** across the entire supply chain and production.

The industry focuses on several key SDGs, including **Goal 12**, which emphasises **reducing waste and optimizing resources**, particularly in water, energy, and pollution management. **Goal 8** promotes **fair labour and better working conditions**, posing challenges for European manufacturers in a competitive market. **Goal 13** stresses the need to cut greenhouse gas emissions, driving investments in **sustainable production**, low-carbon technologies, and renewable energy in line with the European Green Deal. Lastly, **Goal 17** underscores the importance of global partnerships to enhance **supply chain sustainability**, share best practices, and foster innovation.

In conclusion, the textile and garment production sector in Europe should be aligned with the **2030 Agenda for Sustainable Development** and the SDGs. By focusing on responsible production, reducing environmental impact, and fostering ethical business practices, the industry can make a significant contribution to the achievement of the SDGs while remaining competitive in a rapidly evolving global market.

EU Eco-design Regulation: A framework for responsible Industry Practices

European regulations play a pivotal role in guiding the textile sector toward more sustainable and ethical practices. The EU Textile Strategy aims to accelerate the production of the textile and clothing companies transition to a circular economy, setting stricter regulations on textile waste management, eco-design principles, and the use of sustainable materials. This strategy not only addresses environmental concerns but also **fosters innovation in textile processing and garment production of the companies**, ensuring that products are designed with minimal waste, lower carbon footprints, and enhanced sustainability throughout their lifecycle. By enforcing these regulations, the EU seeks to make **sustainable textiles** the norm rather than the exception, encouraging brands and manufacturers to rethink their production models.

In addition, the **EU Ecodesign Regulation**[5] for textiles is an important legislative measure that requires textile products to be designed with a focus on repairability, recyclability, durability, and the use of sustainable materials. This regulation directly impacts textile processing and garment production, as manufacturers must integrate circularity principles into their design and production methods.

However, many SMEs face significant challenges in adapting to these stringent regulations. These include **high costs** associated with redesigning products to meet **new standards**, limited access to resources and expertise in sustainable materials and processes, and difficulties in sourcing **eco-friendly materials** on scale. SMEs may also struggle with the **technological investments** required for implementing more sustainable production methods, and the complexity of meeting compliance across **multiple regulatory frameworks can be overwhelming**. As a result, SMEs often need support to transition effectively to circular practices while remaining competitive in a fast-paced market.

One of the most well-known organisations for the textile market, EURATEX, says that *the EU legal framework should be cost-effective, harmonised and in line with markets and businesses. It guarantees products and processes to be more competitive on the internal and global markets*[6]*.* Among the regulations in this regard, we find the following related to textile and clothing production:

[5] **European Commission. (n.d.).** *Ecodesign for sustainable products regulation*. European Commission. Retrieved March 12, 2025, from https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation_en

[6] **EURATEX. (n.d.).** *Internal market*. EURATEX. Retrieved from: https://euratex.eu/trade-and-internal-market/internal-market/

Personal Protective Equipment Regulation

The **Personal Protective Equipment Regulation** (2016/425)[7] sets **strict safety and design standards** for PPE across the EU, ensuring protective garments meet high safety requirements. It governs the **production of specialised textiles** like high-visibility and flame-resistant fabrics, used in various industries. The regulation also mandates testing and certification to ensure PPE is safe, reliable, and effective in high-risk environments.

Textile Fibre Names and the Labelling and Marking of the Fibre Composition of Textile Products Regulation

On the other hand, Regulation (1007/2011) on **Textile Fibre Names and Labelling** ensures accurate fibre identification and consistent naming across the industry. It standardises **labelling and documentation throughout production and distribution**, enhancing transparency and quality control. By providing clear fibre composition labels, it helps consumers and manufacturers make informed decisions, fosters trust, and promotes sustainability in the textile industry.

Textile certifications shaping the future of quality garment and textile processing

As sustainability becomes a defining factor in the future of textile and garment production, European companies are increasingly integrating **recognised certifications and standards** to validate their commitment to ethical and environmentally responsible practices. These certifications, play a vital role in ensuring that textile processing and garment manufacturing align with global sustainability goals.

OEKO-TEX®

OEKO-TEX® certification is particularly relevant in textile processing, as it ensures that **garments and raw materials are free from harmful substances** and that their production meets stringent safety and sustainability criteria. The **OEKO-TEX® Standard 100** guarantees that every component of a garment—fibre, thread, and even buttons—is tested for harmful chemicals, significantly improving consumer safety. This standard is especially important in fabric finishing, where textiles undergo treatments that could introduce toxic substances. By obtaining this certification, manufacturers assure consumers that their garments are safe to wear and produced with minimal environmental harm.

[7] **European Union. (2023).** *Council Decision (EU) 2023/941 of 2 May 2023 on Harmonised standards for personal protective equipment drafted in support of Regulation (EU) 2016/425 of the European Parliament and of the Council*. Official Journal of the European Union, L 125/37. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023D0941

Bluesign®

Bluesign® certification ensures **sustainability** across the textile supply chain, from raw materials to finishing. It promotes efficient water and energy use, responsible chemical management, and waste reduction. For producers, it reduces environmental impact while improving resource efficiency and cost-effectiveness[8].

Future EU policies will likely mandate stricter **traceability and transparency measures**, meaning that textile producers will need to **document and verify sustainable sourcing, chemical safety, and responsible processing practices**. Certifications such as OEKO-TEX® and Bluesign® will serve as crucial tools for companies aiming to **stay ahead of legislative changes and market demands**.

SMES IN THE EUROPEAN TEXTILE MARKET: A TRANSFORMATIVE SHIFT

The Role and Challenges of clothing and textile SMEs in Europe: Navigating sustainability, innovation and production demands

SMEs, as mentioned, play a fundamental role in the European clothing and textile industry, representing the backbone of the sector (99,7% of the companies are indeed micro and SMEs according to the EURATEX calculations, based on EUROSTAT data):

Figure 2: Number of employees in the textile companies of Europe

	Number of employees	%
Micro	0 - 9	89
Small	10 - 49	9
Medium	50 - 249	2
Large	More than 250	0.3

Source: EURATEX Facts and Key figures, 2024

Across the EU, thousands of these SMEs are involved in the design, production, and processing of textiles and garments, contributing significantly to employment, economic growth, and industrial innovation. However, in recent years, these businesses have faced increasing challenges due to **global competition**, as mentioned before, regulatory shifts from the EU, **sustainability pressures** (reflected in the different certifications) and **regulations**, technological advancements and a

[8] **SGS. (n.d.).** *Bluesign® certification*. SGS. Retrieved from https://www.sgs.com/en-be/services/bluesign-certification

geopolitical fast changing situation (COVID19 pandemic, Ukrainian war, and the new presidential legislature in the USA). As Europe moves toward a more sustainable and circular economy, SMEs must **adapt to new production requirements** from the global markets while **maintaining profitability and competitiveness** in a rapidly evolving and changing situation.

Apart from all this data, the consumers demand is so important during the production process, because 71% of consumers say they are concerned about sustainability when purchasing apparel products, but only 3% have paid a premium for more sustainable purchases[9]. This is a huge challenge for a small company which must develop a new line of clothing production depending on the consumers' demands.

ARTIFICIAL INTELLIGENCE IN THE FUTURE OF TEXTILE PRODUCTION

Artificial Intelligence (AI) is transforming textile and garment production by enhancing design, manufacturing, and supply chain management. Machine learning **predicts trends** and o**ptimises resources**, **reducing waste** and **overproduction**.

AI-driven automation improves **precision** and **efficiency** in cutting, stitching, and quality control, **lowering costs** and **error rates**. Predictive maintenance also extends equipment life and prevents costly downtimes.

In inventory and logistics, AI **optimizes stock levels**, **forecasts demand**, and **streamlines supply chains**, helping smaller manufacturers stay competitive. AI also supports sustainability by suggesting eco-friendly materials and reducing resource consumption.

Despite its benefits, **AI adoption is costly** and **requires skilled workers**, posing challenges for SMEs. However, as AI advances, it will play a key role in boosting efficiency, sustainability, and innovation in textile production.

Risks of unregulated AI in textile production

AI improves efficiency in textile production but poses **risks** if unregulated. Biased algorithms can reinforce inequalities in labour and sourcing, while a lack of transparency reduces accountability. Over-reliance on AI may weaken human expertise and adaptability. Unchecked automation could also cause **job losses**, increasing **economic inequality**. To ensure AI benefits the industry, strong regulations, ethical guidelines, and transparency are essential.

[9] **Venice Sustainable Fashion Forum.** (2022). *Just fashion transition 2022*. Based on BCG climate and sustainability consumer survey, 2022.

CONCLUSIONS

The textile and garment industry is at a pivotal moment, balancing tradition with the pressing need for sustainability, innovation, and regulatory compliance. The rise in production costs, including energy, labor, and material expenses, has placed significant strain on small and medium-sized enterprises (SMEs), which form the backbone of the European textile market. While larger corporations have the resources to navigate these challenges, SMEs must adapt through strategic investments, government support, and industry collaboration to remain competitive in a rapidly changing global landscape.

The transition to sustainable textile processing and garment production is no longer an option but a necessity. The **European different policies** are driving systemic change, pushing companies to adopt eco-friendly practices, reduce waste, and embrace circularity. European regulations set stricter guidelines to ensure responsible production, consumer transparency, and environmental accountability. However, compliance presents financial and operational challenges, particularly for SMEs, which require targeted support through public European funding programs to facilitate the transition.

Technological advancements, particularly **Artificial Intelligence (AI)**, are reshaping the textile industry, offering solutions for automation, predictive maintenance, and data-driven decision-making. Careful implementation, regulation, and workforce training are crucial to ensuring that AI benefits both businesses and workers.

Looking forward, the future of textile and garment production will be defined by industry-wide collaboration between businesses, policymakers, and consumers. Strengthening **supply chain resilience**, investing in **sustainable materials**, and promoting **circular economy principles** will be key to fostering a more environmentally and economically sustainable textile industry. While the challenges are significant, the opportunities for innovation, growth, and long-term competitiveness make sustainability-driven transformation an essential step for the future of European textiles.

REFERENCES

Boston Consulting Group. (2023). BCG 2022 annual sustainability report. https://media-publications.bcg.com/bcg-2022-annual-sustainability-report-apr-2023.pdf

Bluesign®. (n.d.). *bluesign®: Sustainable textile solutions*. bluesign®. Retrieved from: https://www.bluesign.com/en/ **EURATEX. (n.d.).** *Internal market*. EURATEX. Retrieved from: https://euratex.eu/trade-and-internal-market/internal-market/

EURATEX (2022). *Facts & Key Figures 2022 of the European Textile and Clothing Industry.* EURATEX. Retrieved from: https://euratex.eu/facts-and-key-figures/

EURATEX (2024). *Facts & Key Figures 2024 of the European Textile and Clothing Industry.* EURATEX. Retrieved from: https://euratex.eu/facts-and-key-figures/

Eurochambres & SMEunited. (2023). *SME experiences with finance and sustainable investment survey*. Eurochambres & SMEunited. Retrieved from: https://www.smeunited.eu/admin/storage/smeunited/20230927-gh-survey.pdf

European Commission. (2022). *Annual Single Market Report 2022.* European Commission. Retrieved from: https://ec.europa.eu/docsroom/documents/48877/attachments/2/translations/en/renditions/native

European Commission. (n.d.). *European Green Deal*. European Commission. Retrieved from: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

European Commission. (n.d.). *Circular economy action plan*. European Commission. Retrieved from: https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

European Commission. (n.d.). *Ecodesign for sustainable products regulation*. European Commission. Retrieved from: https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation_en

European Union. (2011). *Regulation (EU) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council.* Official Journal of the European Union, L272/1. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32011R1007

European Union. (2023). *Council Decision (EU) 2023/941 of 2 May 2023 on Harmonised standards for personal protective equipment drafted in support of Regulation (EU) 2016/425 of the European Parliament and of the Council*. Official Journal of the European Union, L 125/37. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023D0941

OEKO-TEX®. (n.d.). *OEKO-TEX®: Confidence in textiles*. OEKO-TEX®. Retrieved from: https://www.oeko-tex.com/en/

OEKO-TEX®. (n.d.). *OEKO-TEX® Standard 100*. OEKO-TEX®. Retrieved from: https://www.oeko-tex.com/en/our-standards/oeko-tex-standard-100

SGS. (n.d.). *Bluesign® certification*. SGS. Retrieved from: https://www.sgs.com/en-be/services/bluesign-certification

SMEunited. (2023). *Access to sustainable finance for SMEs: A European survey 2023*. SMEunited. Retrieved from: https://www.smeunited.eu/publications/access-to-sustainable-finance-for-smes-a-european-survey-2023

Venice Sustainable Fashion Forum. (2022). *Just fashion transition 2022*. Based on BCG climate and sustainability consumer survey, 2022. Retrieved from: https://media-publications.bcg.com/bcg-2022-annual-sustainability-report-apr-2023.pdf