

What do textile businesses expect of tomorrow's technologies?

The performance enhancements most expected regard the **ability to cut energy costs for production processes** (81%). Fully 65% attribute a great deal of importance to the **versatility of machinery**, a characteristic that has significant implications both on energy consumption and the management of work processes, which are increasingly oriented towards smaller, customized production lots. The prioritizing of a **reduction in chemical products for processes** (61%) is coherent with the commitments of many of the manufacturers interviewed. Safety on the job always appears prominently among expectations, confirming the central role attributed to the culture of sustainability, with a direct involvement in production activities. Automated systems, robotics and remote control systems are cited as important, albeit secondary. The ability to **quickly and optimally manage data**, necessary for monitoring processes and making decisions, is highlighted by 17 of the manufacturers interviewed as an essential priority, a confirmation that Industry 4.0 is effectively beginning to enter the agenda of Italy's textile sector.

Table 4: Expectations from future technologies

Rank	Expected performances
1	Energy savings
2	Versatility
3	Reduction in chemicals
4	Enhanced safety on the job
5	Reduced water consumption Faster data management
6	Reduced emissions
7	Reduced waste Reduced set-up times
8	Greater automation Less human intervention Optimization of production flows
9	Improved logistics
10	Remote monitoring and control processes
11	Reduced noise pollution

Despite the fact that ACIMIT **Sustainable Technologies** project has now been active for six years, there are large margins for improvement regarding the initiative's degree of dissemination and exploitation. Indeed, only 14 companies declared that they had heard of the ACIMIT Green Label, and among these 9 admit that they only possess a cursory knowledge of it.

The **Green Label** is nonetheless regarded as a **useful information tool** on the environmental performance of technology (36%), and by others interviewed is deemed a tool capable of **stimulating collaboration between textile producers and technology manufacturers** (36%), or a factor that promotes research in technically advanced eco-friendly solutions (19%).

Some textile companies have already invested in machinery with ACIMIT Green Label (13%) and 8 others intend to do so in the near future.

ACIMIT thanks the companies involved in the survey:

Alesilk Sas, Berto Industria Tessile Srl, Besani srl, Beste Spa, Canepa Spa, Cotonificio Olcese Spa, Eurojersey Spa, Filmar Spa, Fratelli Vitali di Roberto Spa, Fulgar Spa, G.Tosi Spa, Itaclab Srl, Italdenim Spa, Lane Bottoli Srl, Lanificio Zignone Spa, Limonta Spa, Maglificio Ripa Spa, Manifattura Sesia Srl, Miroglio Textile Srl, Ongetta Srl, Pecci Filati Spa, Radicipartecipazioni Spa, Sinterama Spa, Taroni Spa, Tessitura A.Imperiali Spa, Tessitura Taborelli Srl, Tintoria Filati Portichetto Srl, Tintoria Vago Spa and other companies who have asked not to be quoted

The full version of the survey is available only in Italian language



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Green technologies for the textile industry: added value in sustainable innovation processes

Executive Summary

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by blumine



Innovation & Tradition

Foreword

Italy's textile machinery industry has always availed itself of the advantages of its territorial proximity to textile manufacturers. This and other resources have allowed for the development and implementation in the field of concrete solutions that are coherent with the innovative trends imposed by the fashion sector or by high-tech applications.

The competitive edge for today's playing field in the textile machinery industry is environmental and social sustainability. Pinpointing which technical performances are deemed crucial to achieving their customer's goals allows manufacturers to properly direct their research and development efforts, in order to anticipate market demands.

The study realised by Blumine/sustainability-lab for ACIMIT aims to provide a contribution in this direction. Various interviews with Italian textile manufacturers committed to improving their environmental impact in relation to production processes provided the groundwork for the research, describing their sustainability programmes, as well as their requirements and expectations in terms of technology and production systems.

The companies involved in the study

The study involved **31 Italian textile manufacturers**, renowned for their commitment to sustainability, divided by sector as follows: 7 in the spinning sector, 9 weaving and knitting mills, 5 in the finishing sector and 10 integrated businesses.

The panel also includes small scale manufacturers with a turnover of under 10 million euros (19% of the total), and less than 100 employees (48%).

The questionnaire was compiled by entrepreneurs who are company owners (68% of those interviewed) or by their managers (32%).

Textile manufacturers and their commitment to sustainability

The majority of those interviewed believe that textile processes have an impact on the environment (58%), with critical factors arising especially in textile finishing processes, in terms of energy and water consumption and emissions.

Table 1: Primary sustainability initiatives

Rank	Goals / Type of initiative
1	Actions aimed at improving the sustainability of products
2	Environmental certifications, LCA, EPD
3	Technology investments aimed at reducing emissions and waste
4	Adoption of renewable energy sources
5	Water purification
6	Supporting Detox / Greenpeace campaign, participating in humanitarian campaigns and social responsibility initiatives
7	Participating in research projects aimed at reducing environmental impacts
8	Respect for the wellbeing of animals involved in production processes

For 94% of those interviewed, sustainability is measured as **an improvement in a product's ecological qualities**. Ranking second in terms of initiatives is the **adoption of documentation procedures** for the manufacturer's degree of sustainability and its products, such as LCA and EPD certifications (77%). For 61% of manufacturers, **the acquisition of technology** represents an essential commitment for the period ranging from 2014 to 2015, in addition to investments in renewable energy sources (55%) and purification systems (52%). Yet another significant factor was the importance attributed to chemical risks and the **elimination of critical chemicals** for the environment (42%). Eleven manufacturers stated that they had implemented **research projects** directed at sustainable processes and products. Lastly, initiatives have also been deployed in favour of social and humanitarian efforts (26%) and for the welfare of animals (13%).

The choice of developing **sustainable products** responds mainly to a need to **differentiate production** from that of competitors (49% of those interviewed). In some cases, however, it is a policy **solicited by customers**, who request specific environmental quality standards (25%), or the need to **conform to existing legislation** in Countries to which the manufacturers export (11%). Other motivations have to do with the manufacturer's ethical vision and focus on continuously improving production standards (15%).

Table 2: Motivations for product sustainability strategies

Rank	Motivation
1	Differentiating production from that of competitors
2	Adapting to customer's requests
3	Adhering to standards imposed by importing Countries
4	Producing articles that are coherent with ethical values
5	Implementing continuous improvement

Interventions on production processes

How important is technology in the implementation of sustainability projects for manufacturers? For 21 entrepreneurs interviewed (68%), **technology is a decisive factor**. The remaining interviewees believe that other contributing factors can be integrated.

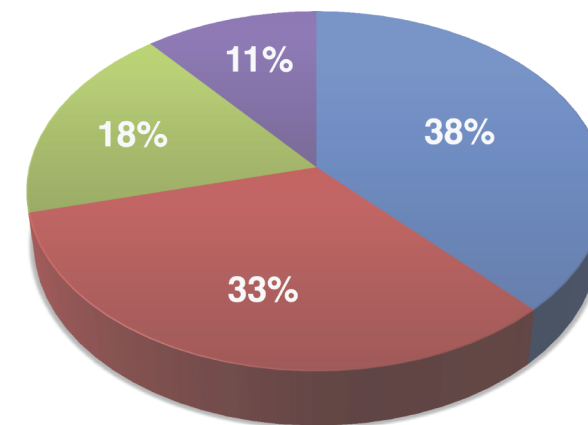
The majority of businesses (84%) stated that they have already implemented actions aimed at **reducing the environmental impact of production processes**, and 2 manufacturers (6%) will be implementing programmes over the next two years. Interventions on production processes aim to **reduce financial and environmental costs** related to consumption (especially energy costs), in order to **guarantee safety and wellbeing conditions for employees** while **containing critical output processes** (emissions and waste). Since sustainability is also significantly connected to the degree of production efficiency and transformation activities, the goals cited by manufacturers also include managerial interventions aimed at optimizing the flow of operations and materials.

Table 3: Goals of business sustainability actions

Rank	Goal
1	Reduction energy
2	Enhanced safety on the job, reduction in chemicals
3	Reduced waste
4	Reduced emissions
5	Optimization of production flows
6	Reduced water consumption
7	Optimization logistics
8	Reduced noise pollution

Nearly all of the businesses interviewed (30 companies) stated that they have carried out significant **technology investments over the past 3 years**. An **increase in the eco-efficiency** of production processes is the primary motivation cited by 38% of manufacturers, followed by the need to **renew their obsolete machinery** (33%). Other motivations for investing in technology are the **introduction of new products** (18%) and **logistical efficiency** (11%).

Graphic 1: Motivations based on technology investments over the past 3 year



eco-efficiency of processes
renew of obsolete technologies
extended product range
optimization of logistics

Return on investment is deemed positive by 67% of those interviewed, whereas 26% estimate that it is too early to make an assessment, or simply do not have available data. Only 7% believe they are not satisfied.

Concerning green technologies already present on the market, 48% of those interviewed stated that it is necessary to **intensify partnerships between textile manufacturers** and textile machinery manufacturers in order to ensure that these technologies are consistently well suited to supporting sustainability programmes. 39% of respondents deem them satisfactory, and 2 companies estimate that green machinery is still too costly. Only one manufacturer does not deem green technologies useful to the realization of its sustainability programmes.

Have business invested or will they invest in specific technologies in support of their declared sustainability programmes? Ad hoc machinery acquisitions have already been carried out by 14 manufacturers (45%) and 3 others intend to do so shortly.