

From textile waste to high fashion: A fiber's journey

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Credit: AI-generated image ([disclaimer](#))

The textile and apparel industries are among the fastest growing in the world, driving a significant part of the global economy. In 2021 in the EU alone, according to Statista, there were 143,000 textile and clothing manufacturing companies, with the bloc home to some of the world's leading retailers and most lucrative brands.

All this activity, however, comes with significant environmental impacts. The European Environment Agency reports that textile manufacturing results in 15–35 tons of CO₂ equivalent per ton produced. Moreover, increased clothing consumption (up by 40 % since 1996) has decreased garments' lifespan, leading to around 11 kg of clothing being discarded per person in the EU annually.

The New Cotton project has come up with an innovative solution to reverse those statistics, based on proprietary technology. The innovation promises to introduce circularity into the [textile industry](#), transforming textile waste into high-quality cotton-like fibers.

Get ready to rock your new recycled garments

Starting in 2025, textile waste recycling will be mandatory in the EU. Project coordinator Infinited Fiber Company, Finland, has introduced its [patented technology](#) converting ready-to-be-landfilled textiles into premium-quality fibers that can be used to produce garments for the entire fashion industry: from high-street to high-end. The company has created the Infinna textile fiber, scientifically known as cellulose carbamate fiber, which looks and feels very much like cotton.

The new fiber contains no [carbon disulfide](#) and can be blended with other types of material such as elastane and polyester to produce different types of fabric. The technology can process [textile](#) waste of a variety of fibers and other cellulose-based waste feedstocks, creating new fibers and textiles. This circular model makes for an all-round scalable and environmentally friendly solution.

Circular garment ecosystem on exhibit

On October 7, 2022, New Cotton made its mark by launching an

installation at the Fashion for Good Museum in Amsterdam. The installation featured the first clothing produced using the new Infinna fiber technology by renowned fashion companies adidas and H&M Group.

A project press release notes: "The newly revealed adidas by Stella McCartney Sportswear Tracksuit Viscose (Gender Neutral) and H&M Group's utilitarian jacket and trousers, are therefore not just beautiful pieces of clothing created using a new, high-quality Infinna fiber created from post-consumer end-of-use textiles: they are a demonstration of the potential of a circular garment eco-system, and highlights [sic] the industry's ability to move from a linear to a circular model of production."

Going forward, New Cotton (Demonstration and launch of high performance, biodegradable, regenerated New Cotton textiles to consumer markets through an innovative, circular supply chain using Infinited Fiber technology) will work towards collecting and sharing data with the wider industry, in an effort to inspire and encourage green and circular solutions. Infinited Fiber Company has already tested and validated its technology, which is now ready for licensing.

More information: New Cotton project website: newcottonproject.eu/

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