## SUSTAINABILITY: ECOTEC



*This spacer fabric using modal and Ecotec helps show the yarn's versatility.*

*Marchi & Fildi*

Earlier this year cotton yarn manufacturer Marchi & Fildi launched what it says is the first "smart" cotton yarn to be made in Italy.

# New cotton yarn process offers 80% water saving

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Biella-based cotton yarn manufacturer Marchi & Fildi has launched a new range of yarns called Ecotec, which it describes as "the first smart cotton yarns made in Italy". Ecotec uses an exclusive, traceable and certified manufacturing process that turns 100% pre-dyed cotton textile clippings into colourful yarns.

Marchi & Fildi said at the time of the launch that this new process produces major improvements in greenhouse gas emissions and in water and energy consumption compared to previous standard methods.

The Italian company has said the refined yarns are high-performance and versatile and can be used in fabric collections for wovens, knitwear, circular knits, jersey and hosiery. It said it is aiming to bring Ecotec to the attention of designers "looking for smarter material choices".

Before the launch it commissioned Bologna-based certifications agency Istituto per la Certificazione Etica ed Ambientale (ICEA) to carry out a lifecycle assessment of Ecotec to quantify the environmental impact of the new range. The headline findings of the assessment are that, compared to manufacturing cotton yarn with no recycled content, Ecotec offers improvements of up to 55% in greenhouse gas emissions, up to 55% in energy consumption and of almost 80% in terms of water usage. An added benefit is that using left-over yarns as raw material reduces the exposure of workers to the chemicals used to make virgin yarns. Other positive environmental effects are diminished waste, with reduced air pollution from waste incineration, reduced exploitation of natural resources connected to

cotton cultivation and the reduced use of pesticides for cultivating new cotton. According to the Italian company's calculations, it takes 112 litres of water and 8.65 kilowatt-hours of energy to produce one kilo of virgin cotton yarn, which could by saved by using recycled yarn instead.

## A long time in the pipeline

Even though its launch came in 2016, Ecotec is an idea that had been in the pipeline for a long time. Based in Biella, a city in Piedmont in northern Italy with centuries of textile (especially wool) heritage, Marchi & Fildi produces both traditional and modern yarns from natural fibres including wool, flax and silk, as well as cotton. But just a look around its own environment in the first years of this century was enough to convince Marchi & Fildi that it could not take its future for granted. The number of textile companies in the area around Biella fell by 27% between 1999 and 2007, with the number of people employed in the industry there reducing by 28% over the same period.

Marchi & Fildi formed in response to this; it is the result of a merger in 2007 of what had been until then two distinct Biella firms, Fildi and Filatura Marchi Giovanni. Together they now have a production capacity of 11 million kilos of yarn per year, divided into four categories: knitwear, weaving, technical and ecological. Today the company does business in 45 countries and recently acquired offices in Hong Kong and New York. Its ecological yarn division has mostly been characterised by a certified organic cotton offering, marketed as Biocot, until now. However, the seeds of Ecotec had already been sown at the time of the merger.

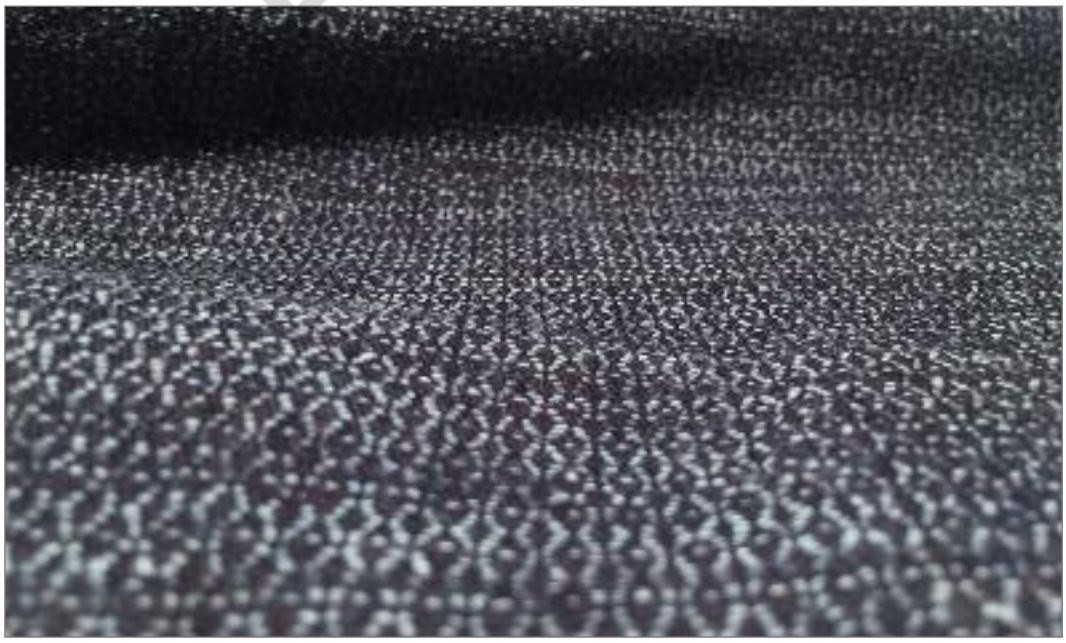
Ecotec was originally a Fildi project, with the company beginning work on it as long ago as 2004. After the merger, the new joint leadership team agreed to make Ecotec a part of Marchi & Fildi's ongoing work too. After all, Ecotec yarns come from recycling material left over from other areas of production and that material continued to be available.

## The process in place

In truth, Marchi & Fildi acknowledges that recycling raw material is a well established practice in the textile industry; what it believes makes the difference here is the process it has put in place to turn the clippings into new yarn, even though Ecotec is processed through a conventional production chain requiring no special technology, only some "specialised work-phases". It says the ongoing challenges to economic growth in Italy have provided an extra incentive, a financial one, for yarn buyers to consider products with recycled content in place of higher-end, more expensive yarns.

The process starts with collecting left-over or excess production material such as off-cuts or imperfectly sewn garments produced at other Marchi & Fildi facilities. The second step consists of separating the collected material by colour, shredding it and finally mixing it with, typically, about 10% new fibre. Marchi & Fildi says it pays particular attention to "the complex blending of left-over material with new fibre" and makes the point that the left-over material it is using to make Ecotec would otherwise go to waste.

And because the Ecotec process skips five conventional production steps, all connected to dyeing (the phase that uses most chemicals) the savings are considerable. Instead, Ecotec production starts with already coloured material and the final output is "a highly resistant and clean yarn", the company says. Early-release combinations have included Ecotec with organic cotton and Ecotec with modal.



*Fabric made from Ecotec in combination with organic cotton.*

*Marchi & Fildi*

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