In the forest of eco-labels, it can be difficult to see the trees. This is why authoritative studies and globally accepted metrics are needed to enable the textile and apparel industry to have a clearer picture of its environmental impact. Carbon footprint data is one of the more accessible and easy-to-understand sustainability gauges.

Carbon questions

There will come a day when each product we buy will have a label indicating its environmental score. No specific date has yet been set but the European Commission is taking measures towards that goal. In its programme to build a single market for 'green products', it is creating a framework that would make it possible to compare the eco-profiles of two products'. Its building blocks are the Product Environmental Footprint (PEF), which quantifies a product or service's environmental impacts based on lifecycle assessment (LCA) and product category rules (PCRs), since it is essential that all follow a single set of rules to allow fair comparison. The pilot phase of both of these programmes has just ended and a so-called "transition phase" will run from autumn 2018 to 2021. It will ultimately translate into a labelling system that will let consumers make more informed buying decisions.

Tools such as these, along with the Sustainable Apparel Coalition's (SAC) Higg Index, are necessary to acquire reliable data concerning the industry's global, company-specific and even product-specific impact. Data brought to light by campaign groups can also help form a clearer image of the issue. One recent report estimates that the apparel and shoe industry's contribution to global warming is 8.1%, with apparel alone accounting for 6.7% of global carbon dioxide



Arquas, the label Turkish denim maker Isko has developed for activewear end-uses, now includes fabrics that have received the Nordic Swan Ecolabel and EU Ecolabel. The company has also obtained Environmental Product Declarations for nine of its product categories.

Isko Arquas

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equivalent (CO_2e) emissions. Materials are said to represent more than 50% of a product's impact. These findings were published in "Measuring Fashion: Insights from the Environmental Impact of the Global Apparel and Footwear Industries" a report released earlier this year by Quantis, a sustainability consultancy, and ClimateWorks Foundation, a climate crisis NGO. The study draws on data found in The Fiber Year Report and The Fabric Year Report of 2017 and the LCA-based Materials Sustainability Index (MSI) module of the Higg Index. A standardised method of measuring environmental impacts related to product manufacturing, life cycle assessments (LCA) usually cover a product's impact from cradle-to-gate, without measuring the consumer use phase. Despite its shortcomings, it does provide useful data and can allow comparisons.

Anticipating the introduction of PEF regulations, a few textile manufacturers have already sought to measure the environmental impact of each square-metre of fabric or kilogramme of fibre produced. Fibre producers such as Aquafil, for its Econyl polyamide, and Nurel, a Spanish polyamide manufacturer, along with Italian warp knitter Eurojersey and Turkish denim mill Isko are among the companies that have obtained formal environmental product declarations (EPD). These documents, states the International EPD System, the Swedish certification organism that delivers them, communicate verified, transparent and comparable information about the lifecycle environmental impact of products. These are freely available to download on its website (www.environdec.com)

Eurojersey began to analyse and measure the impact of its production activity in 2007 when it launched its SensitivEcoSystem programme. This is part of the long-term vision of managing director Andrea Crespi, who believes that tomorrow, every product will have a tag indicating its carbon footprint and wants the company to be "ready for the circular economy". Specialising in unique, patented warp-knit fabrics, the company has obtained EPD certification, which quantifies the environmental impact of every metre of its Sensitive fabrics.

The company's commitment to sustainability can be seen throughout its factory in Caronno Pertusella, north of Milan, where every department displays progress towards goals for reductions in the use of water, energy and chemicals and a decrease in pollution. With the aim of converting reusable waste into raw materials, Eurojersey has achieved two main goals: increasing the annual total of recycled materials up to 130,000 kilos, and making second-choice products into new nylon, yielding 68,000 kilos in the last two years. The same degree of efficiency applies to packaging materials, with annual savings reaching 4,000 metres of cellophane and 9,000 cardboard tubes.



The fabric waste generated by Eurojersey's Sensitive fabric production is sent to Aquafil for recycling; 68 tonnes were regenerated in 2016..

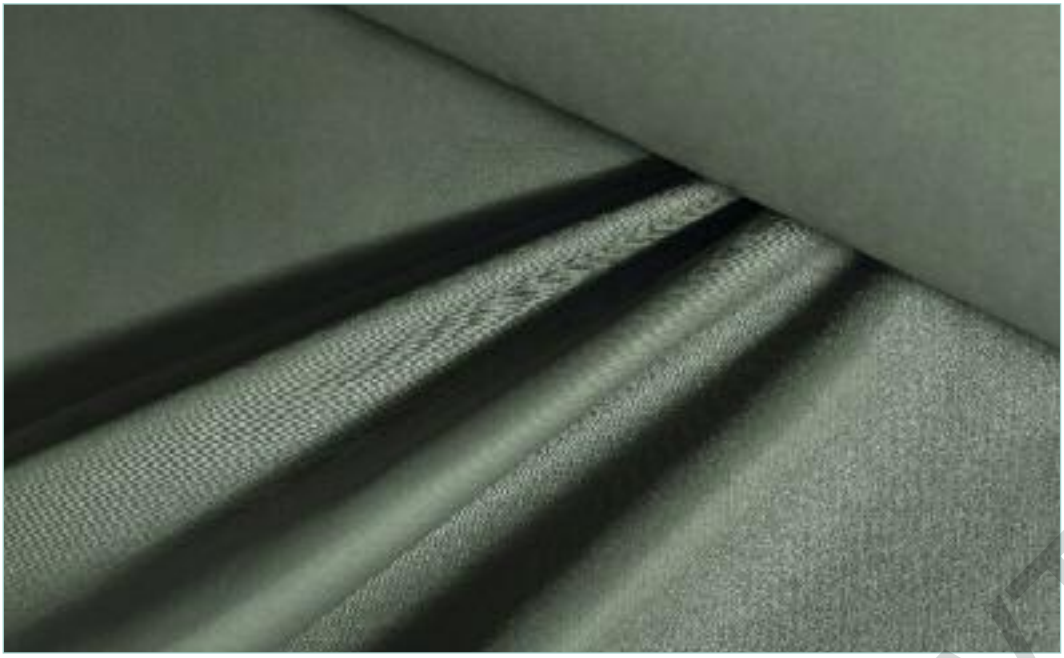
Eurojersey

Turkish denim maker Isko also has a long history of seeking to reduce the impact of its activities. It has also applied for EPD reports for all nine of its product categories. Isko is one of the few non-European Union companies to have earned a European Eco-Label and received Nordic Swan certification. These are, says Isko CSR manager Ebru Ozkucuk Guler, the only two certifications "that cannot be bought".

Increase in recycled content

German membrane maker Sympatex has recently introduced an "eco-calculator" that gives a score to each of its references, again by square-metre. It measures impact based on the MSI database and the Munich-based consultancy Climate Partner suggests carbon emission compensation projects to offset them. Sympatex applies this principle to its own manufacturing processes and can therefore claim to have offered climate-neutral laminates since 2017. The waterproof-breathable film it produces is made in polyether-ester and is PTFE-free, PFC-free and recyclable. "For any given product, a customer can indicate quantities to be ordered and the software will display the equivalent CO_2 emissions and the cost of offsetting these," Sympatex apparel director, Alexander Timmers, tells *WSA*. The eco-calculator also indicates water consumption, which the company intends to reduce and compensate for in the future. If they decide to offset their purchase, Sympatex customers will receive a certificate that can be

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Abakan is a two-layer laminate combining a Sympatex membrane with a fabric made in 60% recycled polyester and 40% Sorona, a partially bio-based stretch polyester fibre developed by DuPont. The company's eco-calculator indicates that 1,000 metres of Abakan fabric cost €134 to compensate for, certified by Climate Partner. The mono-material laminate will also be easier to recycle.

Sympatex Technologies

attached to the label of the finished product with data accessible via a QR code.

The company's CEO, Dr Rüdiger Fox, is on a mission to raise awareness within the outdoor industry, taking every opportunity to speak at industry events. He would like to see a globally accepted tool kit made available to all, which could be the LCA-based MSI. "No single company can enact change alone," he says.

US-based PrimaLoft, also a polyester specialist, has taken measures to reduce its impact from development through to manufacturing. Part of this plan is to increase recycled polyester content, but "without sacrificing performance or increasing prices," says PrimaLoft CEO, Mike Joyce. When a recycled version of its fillers reaches the same level of thermal insulation and comfort as an equivalent reference made in conventional fibres, the old product is removed from the range and replaced by the GRS-certified (Global Recycle Standard) recycled version. Three PrimaLoft references have now switched to 100% post-consumer recycled content. By 2020, the company says 90% of PrimaLoft insulation products will have at least 50% PCR content.

PrimaLoft has been working on reducing its carbon footprint since 2012, says Jochen Lagemann, the company's managing director for Europe and Asia. This includes addressing what he calls "global manufacturing tourism" by which supplies and products are shipped all over the world without heed for the environmental impact. The company sets up new manufacturing facilities close to garment manufacturing locations, as it has recently done in Vietnam, to minimise shipments as well as lead times.

Rethinking product development

Many outdoor brands have initiated sustainability programmes, some have even made it their core strategy, as has ten-year old eco-brand Pyua (pronounced "pure"), based in Kiel, Germany. Its products are made exclusively in recycled polyester and manufactured in Europe. It also strives to limit excess at design and sales level. "We create small collections so as to reduce the number of prototypes and sales samples we need," marketing manager, Julian Stauber, tells *WSA*. The best-selling items of the previous two collections are continued and offered in new colour schemes.



In addition to switching from conventional to recycled polyester, PrimaLoft is expanding its use of natural fibres. This has led to the creation of a hybrid recycled polyester/kapok filler developed for German outdoor brand Vaude.

Vaude

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This process gives products a longer lifespan and is also one of Norrona's sustainable design strategies. The Norwegian brand develops its ranges in a three-year time frame. This means a product will be offered in similar colour schemes for three years. "This allows retailers to show and customers to wear products from different seasons," says Brad Boren, the brand's director of innovation and sustainability. Baselayers have an even longer shelf-life, he adds.

Norrona has set up a sustainability roadmap to identify the key milestones it intends to achieve. For materials, this has led to a shift to organic cotton and recycled polyester. The brand is currently adopting the SAC's Responsible Wool Standard (RWS) for its merino wool ranges. The roadmap also covers internal operations, such as air travel or cycling to work, with bonuses awarded to employees or departments that reach certain goals. "The roadmap has really helped focus the company's efforts," says Mr Boren. To further reduce its carbon footprint, Norrona plans to set up its own factory in Estonia, a project that is also motivated by the desire "to have more control over manufacturing," he says.



Røldal, a new urban-inspired freeride line by Norrona, features a duffle coat styled jacket made in a two-layer Gore-Tex laminate with a wool-like face fabric, a recycled polyester lining and PrimaLoft Silver Eco insulation.

Norrona

Low-hanging fruit

Replacing air travel with video conferences, phasing out plastic cups, cycling instead of driving to work, eliminating carpeting at trade fair booths–these are not the first details companies mention when presenting the measures they are taking to reduce their reliance on non-renewable resources. But they are, in the words of Anna Rodewald, "the low-hanging fruit" that the partner of sustainability consultancy Green Room Voice recommends as a first step in the right direction. "Carbon dioxide emissions are a global issue that everyone has heard about. CO_2e, e for equivalency, is a useful metric to compare emissions and is measured in LCAs. A company's carbon footprint is also relatively easy to communicate compared to other impacts linked to climate change such as biodiversity, toxicity or virtual water," she says. Another advantage for companies is that carbon footprint data is easy to collect, be it air travel or the transportation modes of people or products. "Internally, it is often quite successful and can be turned into a reward system. It doesn't require extra work for staff and each department can have its own goals. Companies can use it to create serious games," she adds.

Currently, carbon footprint data is being used internally and in business-to-business dealings, but has not yet made it to consumer level, or only marginally so. Brands engaged in the process of reducing their impact understandably expect to be able to share their achievements with their consumers at some point. This is one of the tasks the SAC is working on. The organisation's public affairs manager, Pascale Moreau, presented a progress report at the Friedrichshafen-based Outdoor show in June. By 2019, the three Higg Index tools will be ready, she stated. These are the Brand Modules, assessing a brand's design, sourcing and operations, the Facility Tools for manufacturers, and the upcoming Product Tools for designers and developers. If broadly applied, it will create "a common language and make it possible to compare apples with apples," she said. The SAC has been testing different ways of translating Higg Index scores into a labelling system, whether based on A-to-E letter grades, percentages or QR codes, apps and websites.

The need to take action to protect the environment is well understood in an industry that has nature as its playing ground. But sustainability experts warn that inaction also carries financial risks. Known as the three "Rs", these encompass a regulatory risk, of not applying current and future regulations, a reputation risk of public exposure to non-compliance, and what is called a redesign risk, when a company does not redesign or reformulate products ahead of market shifts. When consumer-facing science-based labels do see the day, these risks will be greater, as they require companies to be more transparent. Though monitoring carbon footprint may be low-hanging fruit, it is a step in the right direction.

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