There’s a distinct focus on fibres in this edition of the ITMA Sustainability Bulletin. For many years, in the realms of both natural and man-made fibres, there have been strenuous efforts to reduce the environmental impact of both their manufacture and their use. Now we see clearly that these efforts are bearing fruit. Cotton has often attracted criticism for the water, pesticides and other chemicals consumed in growing it. The expanding organic movement has done much to eliminate the over-use of chemicals, although it’s perhaps unfortunate – as reported below – that textiles will not be included in the European Union’s standards for organic labelling. The Better Cotton Initiative, backed as it is by some of the world’s biggest and most influential brands, is demonstrating that a measured approach to environmental management can bring meaningful gains while benefiting the rural communities that rely on the crop for their subsistence. The advance of the initiative from zero to nearly 700,000 tonnes in three years is an impressive achievement!

Among man-made fibres the rise of bio-sourced polymers has been well-documented. Not only is there a climate-change benefit from their non-reliance on fossil fuels as a raw material but, with the right science, they may also be biodegradable and help to reduce the textile waste burden. Most of us are familiar with the application of such fibres in apparel, but their appearance in technical applications is less well-known. The insight offered in this edition into the work of Advanced Polymer Innovations based in the Netherlands is, therefore, a welcome and timely contribution to the topic.

Charles Beauduin, President, CEMATEX
www.cematex.com
Textiles still excluded from EU organic regulation

EU officials have turned down an opportunity to set standards for labelling of organic textiles in Europe. The EU Commission’s Directorate-General for Agriculture and Rural Development (DG Agriculture) has concluded that the legal basis of the organic regulation should not be extended to cover products such as textiles and cosmetics, stating that “organic farming should remain focused on agriculture, since it is a crucial instrument to deliver environmental services and boost development, innovation and employment in rural areas.” This is according to information released by GOTS (Global Organic Textile Standard), which added that it leaves a significant gap in the organic legal framework.

DG Agriculture is in the final stages of a comprehensive review of the EU organic regulation, looking at four key issues:

• Simplifying the legal framework, whilst ensuring standards are not watered down
• Co-existence of genetically modified (GM) crops with organic farming
• Better control systems and trade arrangements for organic products
• Impact of labelling rules

Organic textiles are not currently included in the EU organic regulation, which covers organic food and farming in Europe. This means that the use of the term ‘organic’ is not controlled in the European market, leading to inappropriate claims, consumer confusion and the risk of ‘greenwash’. GOTS says ensuring that the organic label is based on robust standards and verification will help give confidence to consumers and build the organic textiles market.

EU may accept US chemical controls as safe

The European Union (EU) might accept American-made textile finishing chemicals as safe to sell in the EU without being subject to full-scale European controls, under a planned EU-US Transatlantic Trade and Investment Partnership.

The European Commission has released its initial negotiating documents for the trade deal. They indicate Brussels could sometimes be prepared to accept American standards under a mutual recognition formula, while elsewhere agree a harmonisation or approximation of technical regulations. It would try to achieve “increased compatibility/convergence in specific sectors, including through recognition of equivalence, mutual recognition or other means as appropriate,” said the paper. It added special commitments regarding chemical-based products could also be negotiated.

Greenhouse gas emissions down at DyStar

DyStar has reduced its greenhouse gas (GHG) emissions by 13% to 144,699 tonnes of CO2, compared to base year figures of 166,509 tonnes in 2010, according to the company’s third Annual Greenhouse Gas Emissions Assessment Report, otherwise known as the Carbon Footprint Report.

In addition, it was revealed that the GHG intensity of its production also went down by 27%, although production facilities still accounted for 96% of total emissions.

The observed reduction is partly due to the closure of Leverkusen and Cilegon production plants, which were highly emission-intensive plants as compared to the Group’s overall emission intensity. Production from these plants has been shifted to more modern sites, where DyStar has invested heavily in state-of-the-art production technology. As a result, products are now being manufactured in a less emission-intensive production process.

DyStar’s other major dye-production plants at Ludwigshafen and Nanjing have demonstrated reductions in their emission intensity by more than 50% as compared to 2010. The production plant at Gabus also reduced its emission intensity marginally. This is partially because of shifting production from closed plants to these plants, which led to higher economies of scale.

To view the entire Carbon Footprint Report, click here.

The Better Cotton Initiative (BCI) is expected, in the next two years, to reach production of 2.6 million tonnes by one million licensed producers. And according to membership manager Lilly Gilbert, the goal by 2020 is to reach 30% of the global cotton production – which would involve five million producers and potentially benefit 20 million people, when families are taken into account.

BCI began cultivating cotton only three harvests ago and achieved a global yield of 670,000 tonnes for the 2011/12 harvest. So far, production has been restricted to Brazil, India, Pakistan and Mali. This year growers in China, Turkey and Mozambique joined the project, with others to follow in the USA and Australia.

BCI, which establishes cotton cultivation with fewer environmental impacts, as well as more financial and social gains for the producers, says this should increase the total sustainable production of the fibre to 2.6 million tonnes by 2015.

“Having 3% in the total production of sustainable cotton in only three years is not of little significance – it is more than the worldwide production of organics and ‘fair trade’, which are much more consolidated segments,” said Gilbert, speaking at the VICUNHA showroom in São Paulo, Brazil.

“From now on we will have the big producers and consumers on our side. After the first years of implementing BCI, the expansion strategy proposed for the period from 2013 to 2015 builds not only on the entry of more producers, but also on expanding industry and retailer membership, thus improving the whole chain.”

She believes that BCI should be the ‘mainstream’ cotton, instead of operating in a niche market targeting consumers aware of sustainability issues. “It is an ambitious but realistic goal,” she said.

BCI determined that farmers producing sustainable cotton should use less water and pesticides, and respect crop rotation to improve soil fertility. Unlike other sustainability certification stamps, the BCI declares itself ‘technologically neutral’ – in other words, genetically modified cotton crops are accepted. The decision not to segregate transgenic crops is particularly important and has allowed large producers – such as in Brazil, China, India and the USA – to adhere to the initiative.

"What matters are the benefits obtained. We do not go into the issue of the technology the producer preferred," said Gilbert. “Generally speaking, production management has improved over the last few years. “In India the use of pesticides has fallen 40%, the use of water went down 20% and productivity increased 20%. In Pakistan they declined by 20% and 38% respectively, with a gain of 8% in productivity.”

Rieter publishes 2012 sustainability report

Published for the second time, Rieter’s annual Sustainability Report describes the company’s efforts and progress in economic, social and environmental sustainability. In particular, Rieter once again improved the energy efficiency of its products last year.

In 2012 Rieter said it made substantial progress in further reducing resources consumption at its production plants. For example, building renovations resulted in considerable energy savings at one plant in the Czech Republic and another one in China. And in Switzerland the waterless urinals installed in 2012 save 600 cubic metres of (drinking) water per year at the Rieter plant in Winterthur, among other locations.

Rieter said it has been continuously striving for years to improve environmental compatibility and energy efficiency along the entire value-added chain. The focus is particularly on product and process innovations that benefit Rieter customers financially by minimising their resources consumption.

Among other examples in this connection, the Rieter Sustainability Report for 2012 describes a compact spinning innovation that saves 14% compared with the first-generation machine.
Clariant joins UN Global Compact

Textile-chemical producer Clariant has become a member of the UN’s Global Compact in a bid to underline its commitment to sustainable development. Launched by former UN Secretary General Kofi Annan over ten years ago, the Global Compact is a strategic policy initiative for businesses that are committed to adopting ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

“With our accession to the UN Global Compact, we are demonstrating, once again, that sustainability is more than a buzzword to us. We are already basing our corporate strategy on long-term, sustainable criteria, in order to continuously enhance Clariant’s economic and ecological value creation,” said CEO Hariolf Kottmann. The Compact has built-in reporting structures to ensure that members are sticking to its ideals. In the first half of 2013 it has expelled 99 companies for failure to communicate progress for at least two consecutive years. The list includes several textile companies. These expelled companies represent 3% of the 3,288 participants due to submit a Communication on Progress (COP) within the first six months of 2013. During the same period, 2,233 companies did submit a COP, of which 130 achieved the GC Advanced level, an unprecedented number reflecting an increased commitment to transparency.

In addition, the number of companies joining the Global Compact has significantly exceeded the number of expulsions. With 646 companies from around the world joining the initiative to date in 2013, participants have signed onto the Global Compact at more than six times the rate of expulsions.

UK clothing leaders commit to reduce waste

Companies representing more than a third of UK clothing sales have signed up to a commitment to measure and report the environmental ‘footprint’ of clothing throughout its life – and to take action to reduce its impact.

High-street retailers, charities, recyclers and other major players in the clothing sector are among those who have already signed the SCAP (Sustainable Clothing Action Plan) 2020 Commitment.

To help organisations measure their overall carbon, water and waste footprints, the Waste and Resources Action Programme (WRAP), on behalf of SCAP, has developed a spreadsheet-based ‘footprint’ calculator. This tool will, for the first time, enable companies to quantify and report the total global impacts of the clothes they make, sell and recover, in a consistent way. This baseline data for 2012 will enable the signatories not only to identify and agree targets for carbon, water and waste savings, to be delivered by 2020, but also to identify ‘next steps’.

The organisations will focus on a number of areas, including the use of lower-impact textile fibres, extending the active life of clothing, recovering material that currently goes to waste, and providing more information for consumers.

Arcadia Group, ASOS, British Retail Consortium, Centre for Sustainable Fashion, Clothes Aid, I&G Cohen, John Lewis, Marks and Spencer, Next, Sainsbury’s, Salvation Army Trading Company, Tesco and the Textile Recycling Association are among the first to sign up to the commitment, together with the government environment department, Defra.

Liz Goodwin, WRAP chief executive, said: “We know that overall, clothing contributes around 5% of the carbon footprint and between 6-8% of the water footprint of all the UK’s goods and services. It also accounts for more than 1 million tonnes of wasted materials, making it the most significant category for consumption impacts after food and drink, housing and transport.”
Efforts to lower carbon footprints, while going greener and being more sustainable, are trending topics in research programmes. In fact, projects to develop new applications for biopolymers are increasingly gaining attention. However, the number of applications successfully developed is still rather disappointing.

In this article Bas Krins, Director R&D at Applied Polymer Innovations, highlights examples where biopolymers are chosen, not just as substitutes for traditional oil-based polymers, but because of their special features. This opens new possibilities in high-end applications.

Applied Polymer Innovations (API) is an institute that combines extensive facilities for the evaluation of the physical structure and mechanical properties of polymers with a pilot plant for the production of multifilament yarns, monofilament yarns, films and so on. API was founded as a completely independent research institute, originally based on the research department of the former Akzo fibre division. From the start in 2008 biopolymers have been a major focus of its research efforts, and at the moment API is dedicated to the development of high-end applications of biopolymers. Biopolymers are polymers that are biobased and/or biodegradable. Biobased polymers are produced from renewable resources and for that reason have a lower carbon footprint. Because of customer awareness of the problem of carbon footprints and emissions, there is a market for the use of this type of polymer in some applications. But as biopolymers are clearly more expensive than the traditional oil-based polymers, this market is small.

**Biocompostable Polymers**

Some polymers, like Polylactic Acid (PLA) and PLA compounds, are biocompostable. For the packaging of fruit and vegetables this can be an advantage, and apparently the market has accepted the higher price of the polymers used, as we see this packaging used more and more in supermarkets. Polymers that degrade in soil are used for one-way bags, and in various countries legislation forces shops to use these bags instead of the low-cost bags that do not degrade naturally in an acceptable period of time.

In the past, the main polymer used in 3D printing was ABS. But, because of the bad smell generated when printing this material, the focus has shifted to polylactic acid (PLA). The fact that PLA is a biopolymer does not play a significant role. However, as a major supplier of these monofilaments in Europe, API has observed that PLA has become the material mostly used for 3D printing. The two examples mentioned above are based on the use of existing polymers. But, in many cases it is not possible to use biopolymers available on the market as such.

PLA is the most commonly used biopolymer and there are several grades available on the market. Generally they are characterised by two parameters:
- Molecular weight; and
- Content of D-PLA in the PLA.

In the first few years of research API learnt how to use the right polymer for the right application based on these parameters. Meanwhile, the institute knew that there were many more parameters that were just as important, and it is co-operating with suppliers of PLA in order to optimise polymer quality for certain applications. As a result, API developed PLA yarns with a tenacity above the usual levels available.

Another example of optimisation of the polymer compound is the development of an artificial turf based on PLA. At the moment the standard materials used are PE for the monofilaments (blades of grass), PP for the fabric and latex for the secondary backing in order to glue the monofilaments to the fabric. In practice most of the artificial fields are burned after a period of use that can last up to 10 years. Recycling of the mats is sometimes carried out but it is an expensive procedure. Artificial turf from biobased plastics could be incinerated with energy recovery, thus delivering a carbon-neutral source of renewable energy. Or they could be composted afterwards instead. The third possibility is to recycle the carpet, as PLA is rather easy to recycle to its monomers, the raw materials for the polymer. This, however, means that the monofilaments for the turf have to be produced from appropriate biobased and/or biodegradable plastics. Also the fabric has to be redesigned, and last but not least the secondary backing that sticks the fibre loops to the fabric has to comply with the intended end-of-life scenario. The monofilaments are based
on a special compound in order to meet the necessary resilience criteria. The secondary backing is based on a recipe developed by API.

Another possible application of PLA is carpets. At many trade fairs, exhibitions or other events temporary carpets are used for a very limited period of time – a few days up to a few weeks maximum – after which they are dumped or incinerated. More or less comparable to the development of an artificial turf, a temporary exhibition carpet has been developed.

**Biodegradable Polymers**

In certain applications biodegradable polymers offer a clear advantage. This can be an advantage in the costs of the whole cycle from raw materials to waste, or it can be an advantage in the end-use for the customer. Usually real grass turf is cultivated on nets. These nets are mostly produced from PP, which means that the customers will find this net under their turf many years after installation. In case the user needs to dig a hole in the garden or needs to scarify the lawn grass, the net will destroy the grass field. API is now developing a net for turf lawns that supports the process of installing the turf, but since it is made from a biopolymer that will completely biodegrade in soil, it will start to fragment after some months and finally degrade completely.

An obvious target for the use of biodegradable polymers is where we know for sure that the polymer will end in nature. For example, balloon ribbons and clamps. The top three items of pollution on beaches are: cigarette filters, sheaving ropes (used at the lower side of nets to protect nets from abrasion) and balloon ribbons. Each year millions of balloons are lifted in the air with a ribbon and clamp produced from polymers that do not degrade. At big events thousands, or even tens of thousands, of balloons are used. A nice system has been developed using a ribbon and clamp to fill the balloons with helium and close the balloon by tearing at a ribbon. In this way the balloon is pulled through a clamp and closed airtight in a split second. The balloon itself degrades after returning to the earth, although that may take half a year. The ribbon and clamp, however, do not degrade. They not only pollute the beaches, but are also a danger to birds and sea animals.

API decided, together with Pezy Product Innovation in Groningen (The Netherlands), to develop a ribbon and clamp that are fully degradable. This was a difficult task. The ribbon should have sufficient strength, the clamp must have sufficient tear resistance, and the materials used should degrade in soil, in water and in salt water. At the moment we have been able to fulfil these requirements.

The issue still to be solved is that we are looking for a faster fragmentation in water. Although the materials do degrade in water, birds can become entangled in the ribbons and for that reason we want the ribbons to lose strength when in water on a much shorter time scale.

After interviews with several players in the market, API learned that although the materials we use for this application are more expensive than the traditional materials, the effect on the final costs of balloon, ribbon, clamp, labour, helium, etc, is small. In addition, the indication is that customers will accept a small price increase because of the claim that the materials used are biodegradable.

A more recent example is the use of trimmer lines. A lot of people use grass trimmers to cut the edges of their lawns. These trimmers use a trimmer line, usually produced from polyamide. During use the trimmer line is fragmented, and the fragments are dispersed in nature. Even, these fragments can become part of the food chain.

Although the risks of polymer fragments in the food chain are not clear at the moment, it is obvious that we have to prevent the introduction of small polymer particles into the food chain. In this case, too, the use of a polymer that is degradable offers a big advantage. The requirements are different from the previous examples, as other issues than tenacity play an important role. API has developed an alternative trimmer line based on a biodegradable polymer. We are trying to commercialise the trimmer line at the moment.

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It is a great honour for me to address the very large international ITMA community in this new ITMA Sustainability Bulletin, which I consider a great initiative considering the growing importance of sustainability criteria in the procurement processes.

As chairman and CEO of a French textile-machinery manufacturer, and as president of our national association, UCMTF, which is part of CEMATEX, the owner of the ITMA brand, I have been thinking for many years about our responsibilities as industrialists and good citizens.

At first sight, sustainable development and our corporate goals may appear to be – at least partly – contradictory. Actually, they are not. First of all, the end-users are more and more demanding where sustainability is concerned. This is true for all textile products. For apparel or home textiles, consumer demands are transmitted up the textile pipeline from the very powerful international brands and distributors, all the way up to us, the machinery manufacturers. For technical textiles, public and private procurement policies follow the same trends. For example, in France, public procurement criteria include sustainability.

Another reason is that we design machines and production processes that save energy, water and raw materials. Our national manufacturers have found many ways to do this: fine tuning the machines; finding new processes for individual machines; optimising a whole production line. The textile producers of apparel, home textiles and technical textiles are extremely sensitive to energy, water and raw-material savings and compare precisely the investment costs and the savings. Often their own desire to promote sustainable development is supported by profitable returns on their investments.

I can conclude in a very positive way, which is now embedded in our corporate strategies and for which we invest heavily in technical expertise: to deliver sustainable profits for our companies, we have to act in the context of a sustainable development framework for all our stakeholders and for our global community. Our machines, themselves, have to be manufactured to leave the least possible footprint on the environment. We have to put more emphasis on their eco-design, propose upgrading schemes and plan how the materials used will be recycled at the end of their life. UCMTF can help promote such a policy.
Tests confirm sustainability calculation

Finishing-machinery manufacturer Fong’s has confirmed the validity of Clariant’s ‘One Way’ sustainability calculation in a series of production tests.

Clariant’s One Way calculator is a software tool that helps textile brands, retailers and manufacturers assess the cost, performance and environmental profile of evaluated products, almost instantly. Emrah Esder, Clariant’s head of product marketing for textile chemicals, said: “The One Way system is designed to help our customers balance the twin objectives of ecology and economy and enables them to see that more sustainable and efficient solutions do not have to come at a higher cost.”

The calculator takes account of parameters including raw materials, water and energy consumption. In addition, the database of Clariant’s One Way system contains more than 200 dyes and chemicals that have been screened and pre-tested by the company’s product-stewardship specialists against more than 15 eco-standards and other criteria. These include bluesign, Oeko-Tex, GOTS, the 11 restricted substance groups classified under the Joint Roadmap Towards Zero Discharge initiative, 20 of the major brand RSLs (restructured substances lists) and other factors such as bioelimination.

Suitable products are first identified and shortlisted and individual cost, performance and environmental profiles are then calculated, using the One Way Calculator.

Fong’s carried out trials of the latest low temperature pretreatment processes for fabric dyeing – including Clariant’s own solution called BLUE MAGIC. It said its test data very closely matched the initial Clariant calculations using the new One Way Calculator.

The tool allows for the evaluation of the environmental profile of given production processes, using parameters such as dyes and chemicals, water, energy or time – differentiated by country, and based on actual measurements of chemical oxygen demand (COD), biological oxygen demand (BOD), CO2 emissions, energy consumption, and water usage.

Jeanologia opens Chinese demo centre

Spain’s Jeanologia and its Chinese partner Prosperity Textile have launched a sustainable-technology demonstration centre in Guangzhou, China.

The centre will be used as a referral centre in Asia for the demonstration of specialised sustainable technologies, such as laser and ozone, which can reduce production costs while saving water, energy and chemicals and avoiding the health risks of some conventional processes. It will also be used for the training of operators.

Jeanologia’s president, Enrique Silla, has forecast that the production of jeans will remain concentrated in China but that production processes will change.

“In five years, China will remain the world’s leading producer of jeans but this time thanks to the efficiency of sustainable technologies like laser treatments or the use of ozone instead of water,” said Silla.

The development comes as the ITUC/GUF Hong Kong Liaison Office (IHLO) – representing a partnership of international trade unions – recently issued a new report revealing that sandblasting is still widespread in China, despite most Western brands banning the practice three years ago because of its link to silicosis, a deadly lung disease that has already caused the deaths of many garment workers.

The latest study - Breathless for Blue Jeans: Health hazards in China’s denim factories – highlights poor conditions in six denim factories in the Chinese province of Guangdong, a region...
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responsible for half of the world’s entire production of denim jeans. The research, based on interviews with workers, revealed that workers are also exposed to other dangerous finishing techniques to distress denim, including hand-sanding, polishing, dye application and spraying chemicals such as potassium permanganate, with limited protective gear and inadequate training in the proper use of equipment.

www.jeanologia.com
www.cleanclothes.org/resources/publications/Breathless

Energy saving ink can cut CO₂ emissions
Magna Colours, a UK-based ink manufacturer, has launched a textile screenprinting ink that it says could save thousands of tonnes of carbon dioxide a year. Magna says the new ink for T-shirts can be cured in half the time, and at lower temperatures, compared to other products on the market, and can reduce energy use by up to 75%. The Aquafast110 ink can be cured at 110°C in one and a half minutes, rather than at 165°C in three minutes for standard water-based inks. This saves 113g of carbon dioxide for every T-shirt, says Magna.

Operations manager Steve Noble said: “It might seem a small saving per T-shirt, but multiply that by the millions that are printed each year and it adds up to potentially hundreds of thousands of tonnes of carbon dioxide.”

www.magnacolours.com

PFOA-free nanocoatings for textiles
Belgium-based Europlasma, a leader in low-pressure plasma technology, has developed a new family of PFOA- and PFOS-free nanocoatings, under the Nanofics 110 brand name. Nanofics refers to nanoscaled functionalisation in the core of complex shaped materials and products. It is Europlasma’s patented and patent-pending nanocoating technology platform, first applied on industrial scale in 1998. The Nanofics 110 fluoropolymer coatings are highly water-repellent (water contact angle of 110 degrees according to ASTM D5964) and highly oil-repellent (oil-repellency level 6 according to ISO 14419).

Peter Martens, product manager at Europlasma, said: “Europlasma is now the first to offer PFOA- and PFOS-free nanocoatings for technical textiles. And we are able to apply these coatings on an industrial scale, with coaters able to handle rolls with widths up to 1.5 metres, and diameters of up to 0.6 metres.”

www.europlasma.be

Yarn Producer First to Get in STeP

Swiss yarn manufacturer Hermann Bühler AG has become the first company worldwide to receive a certificate for sustainable textile production in line with the Sustainable Textile Production (STeP) system developed by Oeko-Tex. STeP provides modular analysis for environmentally friendly and socially responsible companies in the textile chain – so providing globally active textile brands, retailers and manufacturers along the textile chain with an objective and transparent tool for communicating their sustainable production conditions to the public in a clear and credible manner.

The heart of the new STeP certification is the modular analysis of all relevant company areas, such as quality management, use of chemicals, environmental protection, environmental management, social responsibility, and health and safety.

Serge Rolle and Adrian Meili from the Swiss textile testing institute TESTEX AG presented the very first certificate to the Bühler
team of Martin Kägi (CEO, Bühler Group) and René Reichmuth (CEO, Hermann Bühler AG).

Bühler, a company with a 200-year tradition, produces yarn at its factory in Winterthur, Switzerland, and its many yarn qualities are the basis of swiss+cotton® textiles manufactured by international circular-knitting mills, weaving mills and warp-knitting mills. The company has been documenting the safety of its yarns according to Oeko-Tex Standard 100 since 1993, and since 2007 the factory has been certified as an environmentally friendly and socially acceptable production facility in line with the requirements of Oeko-Tex Standard 1000.

With the new STeP certification, Bühler hopes once again to prove its comprehensive commitment to environmental protection and sustainability, which is so firmly rooted in its philosophy. Martin Kägi said: “The issue of sustainability is more and more in the public eye. Our company has already been employing an integrated strategy for some time, taking into account the manufacturing of first rate yarns as a basis for high-quality durable clothing as well as environmentally friendly production conditions.

“The interactive STeP web tool assessment quickly and unbureaucratically recorded our modern, effective production methods and the initiatives of our committed employees on a process and product level. We were also able to use the assessment phase to verify our current position. The certification for sustainable textile production is a confirmation for our actions so far and acts as further incentive.”

Adrian Meili from TESTEX also believes in the advantages of the STeP certification system. He said: “Textile and clothing manufacturers can make their production processes much more efficient on the basis of a STeP certification. With the scorings for the individual areas, our system helps them to determine their company’s positioning with regard to sustainability and identifies areas for improvement.”