NONWOVENS TARGET MORE SUSTAINABLE FUTURE

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The nonwovens sector is planning to inject more sustainability into its mix, with issues like new EU rules, a greater focus on recycling and the coronavirus pandemic all set to influence the future of the industry.
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The European Union is betting big on circular economy initiatives that boost recycling and reuse while decreasing resource consumption. But ambitious policies need industry buy-in to work and they appear to be getting it already.

In March, the European Commission published the Circular Economy Action Plan, a package of initiatives that aims to double the EU’s use of recycled material this decade, increase GDP and contribute to the bloc’s climate agenda.

Among the raft of measures, the Commission wants to incentivise manufacturers to design products that last longer and can be recycled or reused, but also grant consumers a “right to repair” for their purchases.

The plan tackles a number of sectors, including electronics, plastics, buildings, packaging, batteries and textiles, the latter of which is among the biggest consumers of raw materials and a significant greenhouse gas emissions producer.

At a virtual event organised by EDANA, an association group for the nonwoven industry, Paola Migliorini, a senior Commission official who has oversight of the action plan, described how ratcheting up circularity will have an across-the-board impact.

“We are using way too many resources in respect to what we have available. Three times that one planet can give. This creates up to 90% of biodiversity loss. By 2050, waste generated could increase to 70%,” she warned.

Migliorini also explained how the strategy aims to extend eco-design principles beyond energy-intensive products and implement a “digital product passport” that will give recyclers and consumers vital information about an item’s composition.

In terms of textiles, the Commission intends to make sure EU countries collect waste textiles separately by 2025 so that they can be recycled or reused to a greater extent than they are currently.

The EU executive is also working on an Extended Producer Responsibility scheme (EPR) for textiles, under
which producers would be tasked with making sure their products are disposed of in the correct manner.

EPRs are designed to incentivise producers to make their products easier to recycle or reuse, as they are held financially or physically responsible for their fate. The Commission's textile EPR is still on the drawing board and a list of products still needs to be finalised.

**READY, WILLING AND ABLE**

The Commission’s plans appear to have fertile ground in which to grow, as there is “clear awareness and engagement about sustainability of products” in the nonwovens sector, according to EDANA head Pierre Wiertz, who nevertheless warned that “circularity is one of the most complex pillars of sustainability strategies”.

Plenty of challenges but also opportunities for improvement loom large. Nonwoven products include disposable items like wet wipes and diapers, both of which raise challenges when it comes to end of use and for which solutions are quickly being developed.

Experts on the virtual panel explained how harmonising standards when it comes to degradability and compostability is part of the solution, as that will allow manufacturers to sell products that are fit for the entire market.

Abby Turner and Eduardo Alvarez of Dow Health and Hygiene added that “hygiene products normally include several components, so recycling requires multiple streams. They also produce low-quality recyclates.”

That is why the sector is looking at improving specific points of the value chain, in an effort to sell products that can be easily recycled, reused or disposed of in an environmentally friendly way.

First, there should be a “designing with the end in mind” mantra, according to Turner, who explained that, in the case of diapers, the number of polymers used to manufacture them can be reduced so as to make recycling simpler and more cost-efficient.

Mechanical recycling requires clean waste streams in order to function well, so authorities should make sure waste is collected correctly.

“Serious inroads are being made. Multiple technologies are being implemented in various regions around the world,” the two experts from Dow concluded.

**INNOVATIVE STREAK**

Another option to reduce material consumption and boost recycling is to use waste products to create new goods. Bio-polyethylene can be produced using run-offs from the paper industry, which can reduce CO2 emissions drastically if done in a sustainable way.

Stefan Roest and Gustaf Tobieson from Austrian chemical firm Borealis explained how that same process can be used to make renewable polypropylene (PP), a material used in the automotive, energy, healthcare and household goods industries.

PP requires oil-rich waste streams for feedstock and this puts it in direct competition with the transport sector, which also wants to utilise the likes of used cooking oil to make second-generation biofuels.

“This is the first step towards decoupling from fossil fuel feedstock wastes by using second-generation feedstocks,” Tobieson insisted, adding that third-generation sources, which include algae and captured CO2, also have a future.

In order to scale up the use of waste streams, Borealis suggests initially mixing renewable materials with fossil fuel inputs, but ensuring that both are recorded for bookkeeping purposes. The amount of renewable input can then gradually be increased.

Rupesh Khare, lead scientist at Birla Cellulose, described how chemical recycling could unlock even greater levels of circularity, by producing recyclate material that is of the same quality as virgin material.

“Mechanical recycling is suitable for low-grade products, it is more associated with downcycling, as it makes fibres weaker,” Khare explained, adding that chemical processes still need to be commercialised.

The challenges again include making sure waste textiles are collected and sorted in the right way before recycling, as well as technical issues like how to deal with dyes and synthetic blends in clothing.

But Khare was adamant that his work will continue to seek answers to those hurdles, as “upcycling of textile waste is a socially rewarding opportunity.” The viscose fibres, produced with recycled content, provide opportunities for use in nonwoven fabrics.
Chances are you have never heard of nonwovens before, but you are surrounded by them at this very moment; in the seat underneath you, the suit you’re wearing, as part of the insulation or roofing of your home or workplace, the filters in your car and the diapers your baby wears.

EDANA is the leading global association and voice of the nonwovens and related industries.

Nonwovens are present in a range of products of everyday life, where they perform crucial functions contributing to comfort and convenience. As a responsive and responsible sector, circularity is one of the driving forces for innovation in this rather unknown industry.

Nonwoven manufacturers, their suppliers and converters are increasingly focused on finding circular economy solutions. To this end, EDANA, the Brussels based nonwovens industry association, is organising a Circular Nonwovens Forum. Creating sustainable, circular nonwoven-based products starts with the right selection of raw materials. The first edition of the Circular Nonwovens Forum will therefore cover how raw material providers are working on circular economy solutions.

The Nonwovens Circular Economy aims at improving the dialogue and keep ongoing conversation between

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the nonwovens industry and external stakeholders on circularity. To this end, two moderated break-out sessions are organised, one covering the presentations by Dow and Borealis and another on the presentation by Mérieux and Birla.

The forum will open with a keynote speech on the European Commission’s new Circular Economy Action plan given by Paola Migliorini, the Deputy Head of Unit for Sustainable Production, Products & Consumption. This will be followed by a range of insightful presentations and discussions covering initiatives to address the circularity of AHP plastic waste, the biodegradability and compostability of nonwovens, material innovations, and developments in renewable polypropylene.

Nonwovens are innovative, high-tech, engineered fabrics made from fibres. They are used in a wide range of consumer and industrial products either in combination with other materials or alone. Nonwovens are designed for their specific application, ranging from thin, light weight nonwovens to strong and durable nonwovens, be it consumer or industrial applications. The combination of their specific characteristics through the raw materials selection, the formation and bonding methods used or the applied finishing treatments, such as printing, embossing, laminating etc. allow to deliver high-performance products.

Nonwovens may be a limited-life, single-use fabric or a very durable fabric. According to the use they provide specific functions such as absorbency, liquid repellency, resilience, stretch, softness, strength, flame retardancy, washability, cushioning, filtering, bacterial barriers and much more. These properties are often combined to create fabrics suited for specific jobs while achieving a good balance between product use-life and cost. They can mimic the appearance, texture and strength of a woven fabric, and can be as bulky as the thickest paddings. Innovations in nonwoven fabrics are growing as rapidly as the demand for them, with almost unlimited possibilities for a wide variety of industries, from agriculture to automotive and construction to childcare.

Today EDANA unifies the diversified interests of over 295 member companies from 36 countries in a unique vertically integrated structure along the supply chain. Based in Brussels, EDANA reflects and caters to the changing dynamics and priorities of the nonwovens industry, acting as the voice representing and actively promoting the common interests of nonwovens and their related industries throughout the world, with a particular focus on Europe, Middle East and Africa.

In its recent sustainability report, the association shows the many results of the commitment of the industry to sustainability. EDANA is proud to see how sustainable practices drive innovation in creating new products and solutions towards the many challenges our industry is facing. As representatives of the entire value chain, EDANA considers it its duty to connect and support all of its members. Therefore, EDANA had developed a new Sustainability Vision 2030, hereby giving clear insight into the priority topics on sustainability for our industry. The vision combines the most prominent materiality topics of the materiality matrix with key SDGs for the industry. This results in four key areas clustering twelve materiality themes. Each key area is illustrated by a clear ambition. The Vision aligns our industries’ priorities and as such, allows to collectively head in the same direction. It acts as a useful guideline to help industry members identify their priorities and further develop their own sustainability strategy.

To learn more about nonwovens and actions the industry is undertaking, you can visit the www.edana.org or follow the campaign “Nonwovens you say?”
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