

sustainable



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Greening the packaging space

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Getting there

As you read this, the year 2023 is almost on its last legs, edging towards the end. And what a year it's turned out to be.

There have been extreme, climate-related events, including ice storms in the southern United States, wildfires in Chile and Canada, record-high heatwaves across Asia, storms and flooding in Europe and Asia, and droughts. Deadly earthquakes occurred, among others, in Turkey, Nepal and Afghanistan. The year saw record levels of acute food insecurity; one war continued, another ignited. Inflation, the high cost of energy and rising interest rates remained a concern. The socioeconomic effects of three years of pandemic are still being felt. In Europe, the shortage of skilled labour has caused production constraints in sectors such as manufacturing and industry. The list goes on – and on – but enough already.

I believe we can all agree that 2023 has been a challenging year.

But there was also positive news. For example, the first 'zero' draft of a global plastics treaty was compiled, laying out in very broad lines what might ultimately be included in any legally binding agreement to end the leakage of plastic waste into the environment by 2040. And by the time you read this, the third round of plastics treaty negotiations will have been and gone, hopefully furthering the progress towards the envisioned outcomes.

Obviously, the formulation of such a treaty is far from straightforward given the dichotomy between the countries wanting to limit the production of more plastics and the petrochemical and the plastics industries, which champion recycling as the solution to plastic waste. Technologies such as chemical recycling are being put forward to help bridge the gap – after all, by reducing the amount of virgin material used and converting waste into a resource, chemical recycling, like mechanical recycling, cuts two ways. While it's a nascent – and controversial – industry, it has seen tremendous development in the past few years. We've put together a Chemical Recycling Tracker to follow the activity in this area; those interested can access the latest version, which includes a finely grained distinction between chemical recycling technologies, a technology overview at the bottom of the page, and updates on the status of the over 130 projects and announcements, on our site.

2023 was also a year in which sustainable packaging continued to gain momentum. On that topic, this issue of *Sustainable Plastics* includes a case study for a medical device package for which one of the requirements was recyclability; a partnership aimed at bottle-to-bottle circularity; and an interview with Paul Antoniadis, of good natured Products – a pioneer company with an inspirational name in the sustainable packaging space that understands that transitions are never easy. "We're very much concentrated on making it easy and affordable for businesses and consumers ... to take that first step," he said. "To solve real business problems while improving their environmental and human health impacts."

Isn't that exactly what sustainability is about?

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Renzo Gibellini



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"I tell my people not to be afraid of the future, but to embrace it and to make sure that we will continue to be a key player in the market. That is what is important," Gibellini said.

From an industrial point of view, Reflexallen, a tier one supplier to the automotive industry, is ideally located in Italy's 'Motor Valley,' between Modena and Bologna, where all the big names are headquartered.

"Ducati, Ferrari, Lamborghini, Maserati, Pagani – they're all here," he said. "But in addition, other industries such as packaging, medical, ceramic tiles and of course automotive components are also strongly represented in the area."

As a result, there is also a lot of talent available in the region, which is a crucial part of any company's success.

Over the years, Reflexallen has branched into five divisions – pneumatic, electrical, fluid power, safety devices and special composites – all based on the core principle of transferring energy. "We transfer air, fluids, electricity and data in many different forms. We offer our customers solutions for transferring energy into different kinds of environments. And because we are basically an automotive tier one, I would say that the vast majority of our products are safety critical – safety critical application products that must be validated under the most extreme tests," he said.

For example, one of the company's core products is air brake tubing, which ensures heavy trucks, trailers and buses are able to brake safely and efficiently. The tubing must therefore perform under the harshest of conditions, at high and low temperatures, durably and reliably. They are products that do not readily lend themselves to being redesigned, for example, for enhanced sustainability, noted Gibellini, who nevertheless believes that this is the direction in which to grow. It's a conviction that led him to change the company's 'Driven by Energy' vision into 'Driven by Sustainable Energy'.

"The challenge for me is the business I am in – the very competitive environment of the au-

Passion, ambition and a determination to succeed

Renzo Gibellini, founder and owner of Reflexallen, a tier 1 supplier to the automotive industry, described what drove him to establish his company 35 years ago. They are qualities that propelled Reflexallen's growth from the company's humble beginnings in a garage to the global operation it is today.

"I started the business at age 23, really with no resources, from scratch," Reflexallen founder and owner Renzo Gibellini told *Sustainable Plastics* in an on-

line interview. "But I was determined to succeed."

As far as that goes, little has changed. Gibellini still has the passion and determination that drove him 35 years ago to build his own business

and that today gives him the energy to create new opportunities. It is an approach that has resulted in the company's growth into a global force, with sites in Brazil, the United States, India, Japan, China, the

tomotive industry. It's an industry that perhaps may claim that sustainability is important, but at the end of the day, it's still the price that's the decision-maker. For us, it's usually been almost impossible to offer sustainable solutions," he said.

Sustainable building

To illustrate his commitment to achieving more sustainability in the business, Gibellini pointed to the building in which Reflexallen's headquarters in Italy are housed. At the time it was built, in 2005, it included a number of features that were then uncommon. The building is surrounded by nature, he said, where the air is cleaner, taking advantage of the natural light and built to conserve energy and resources. "The building was designed there for creating ideally the best environment for a human being to deliver their best performance. This is what I believe in," he said.

It is a belief that led in 2010 to the introduction of the company's very first products based on bio-based material made from castor oil. "Since then, our customers know that if we can, we will push them in the direction of a more sustainable choice," he said.

Safety critical, environmentally safe?

"It is possible to produce safety critical components that are better for the environment, but it requires a truly massive mindset change from the industry," Gibellini said. As the sustainability trend continued to gain strength, he recognized the need to actively pursue the options open to Reflexallen to promote that change. "We use plastic," he said. "And while we cannot replace it with a nice natural product like wood, we can make better choices. Because I understood that the market wanted us to, we have now also become the first in the market to introduce a range of air brake tubing that incorporates recycled material."

The products have been designed with a multi-layer



Reflexallen's headquarters in Italy

Reflexallen is a tier one supplier to the automotive industry

"We produce safety critical products for the automotive industry"



'sandwich' structure, with the layer in the middle featuring a high content of recycled material. According to Gibellini, the company also has a customer - a truck manufacturer - that is currently finalising the testing of the new products and is very keen to take these into their production. Once they do so, they will save some 1,800 tonnes of CO2 emissions on the European production alone.

"This represents a huge change in the thinking about recycled materials," he stressed. "Recycled materials have long been considered low value, not something to use in safety critical applications. This product is just a first step, but it shows how we are completely changing the picture. And it is something I am very excited about."

The multi-layer design using recycled content is an approach that is also being expanded to other products, he added. It can also be applied to products outside the automotive industry

- 'anywhere where energy is being transferred,' he said.

Marketing this vision of a more circular future to customers takes time, and it is something Reflexallen offers next to its conventional solutions. "But because we are moving in this direction, it is now also part of how we assess a customer's need. Our first question would be about the kind of energy a customer needs to transfer; the second about the environment in which this must take place. But now we have a third to add: how circular do you want your solution to be? We can now also offer circular design."

An important aspect in this respect is price. The sheer competitiveness of the market, in combination with the current economic headwinds, means that Reflexallen cannot offer its eco-designed solutions at a higher price than the conventional products. To date, the company has been able to offer these at a price that matches

that of the conventional products. "So, the difference for our customers is only a gain," said Gibellini. "A greener product that saves thousands of tonnes of CO2 that costs the same."

Currently, the company is developing coolant lines for thermal engine and battery vehicles as well as fuel lines. The new eco products will be marketed under a new brand name, he added.

And looking ahead at the growing number of electric vehicles being produced, he remained confident about his company's position. "Instead of just cooling, for electric vehicles, we talk about thermal management," he said.

"For the heating pump, for the battery and for the charger inside of the vehicles, and thermal management mean being able to control the temperature, keeping this within a certain range, which means you need the right tubing, the right connectors and the right terminals. This is something we have experience with, and we have this expertise in our portfolio."

"So, we have a clear path for tomorrow. And, let me repeat these words: that's really the reason why I'm so excited about the future of our company."