

Leading the Way towards Greener Electronics Manufacturing

One of our Product Managers, Marcel Mühlemann, had the privilege of engaging in an interview with Stephen Las Marias, editor of EE Times Asia. The focal point of the interview centered around our latest product line, the Green Line, highlighting SCHURTER's resolute strides in crafting sustainable electronics.



Written by Stephen Las Marias, editor of EE Times Asia.

Global warming is real—and it is happening at an unprecedented rate. According to a NASA report, the current warming trend, as compared to the past cycles of ice ages and warmer periods, is different because this time around, it is caused by the rapid increase in carbon dioxide (CO₂) emissions from human activities.

And the electronics industry is among the many key contributors to these greenhouse gas (GHG) emissions worldwide. According to IDTechEX,

the electronics industry accounts for around 4% of the global CO₂ emissions. Meanwhile, notes that GHG emissions from electronic devices and their associated electronic waste increased by 53% between 2014 and 2020, with around 580 metric tons of CO₂ emitted in 2020 alone.

The onus then is on every stakeholder in the value chain—from the raw material suppliers to components makers, all the way to electronics manufacturers—to create innovations and implement sustainability strategies that will help reduce the environmental footprint of the industry.

Green Products

One component maker that has taken a solid step in creating sustainable electronics to help decarbonize the industry is SCHURTER Group, a Swiss manufacturer of circuit protection components, connectors, switches, and EMC products.

"Sustainability is definitely a megatrend," says Marcel Mühlemann, Product Manager at SCHURTER's Components Unit—the largest business unit. "And I am happy that it is so. Luckily enough, it is a top priority of every government and

enterprise. In my view, it is a good sign that we need not that much explanation any longer why it should be on top of everybody's minds. The reason is relatively simple: we need to be more reasonable with our resources and take more care of our environment. Because, at the end of the day, there is just one blue marble that we all live on."

In line with the continuous digitalization trend worldwide, electronics manufacturers' efforts in creating sustainability strategies are a critical factor in decarbonizing the industry, and in working towards the Net Zero goal.

And to help their customers toward this path, SCHURTER has released its "Green Line" portfolio of products.

Made from plant-based raw materials—specifically, Ricinus (castor bean plant)—SCHURTER's Green Line products include the Type 6100-3 and 6100-4 IEC Inlet Type C14; Type 6102-3 and 6102-5 IEC Inlet Type C18; and Type 6600-3 and 6600-4 IEC Inlet Type C14.

The environment-friendly alternative to today's widely used fossil-based plastics, bio-plastics—made from plastics manufactured from plant-based raw materials—have a CO₂ neutral footprint over the whole lifecycle, resulting in a significant CO₂ emission reduction. In addition, bio-based-plastics are often less dense than petroleum-based plastic, resulting in the use of less materials.

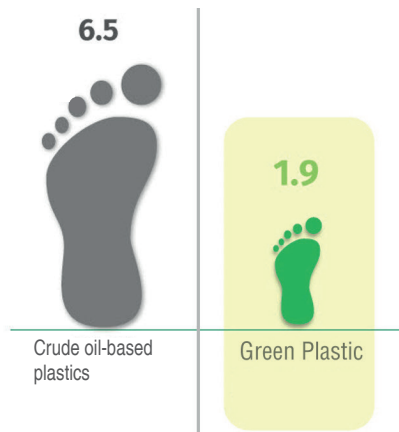
With its Green Line, SCHURTER can reduce its CO₂ footprint by up to 68% per product, which in turn helps their customers curb their carbon footprint as well.

"Sustainability is one of our driving forces," says Mühlemann. "SCHURTER's goal is to reduce our carbon footprint by 50% by 2035."

Supporting a circular Economy

By using such bio-based materials, SCHURTER is enabling a circular economy.

"This Ricinus plant, which is the base from which the castor oil is extracted to create polyamides, grows in areas



CO₂ footprint of various plastics, unit: kg CO₂ eq./kg

that are not suitable for other types of agriculture. It does not need pesticides to grow, it is not edible for humans — in short, it is not a food crop. This is one of the main characteristics that we have looked at as well," explains Mühlemann. "And it is fully recyclable, so we can bring it into the circular economy again."

Of course, there are many other possibilities to try to reduce CO₂ footprint down at the end of the day, he says, and using biobased materials is just one of the options to do this.

"There are many more areas where you can reduce your footprint," says Mühlemann. For instance, there are recyclable materials that can be used when it comes to the packaging of the products, he adds.

Product price is not an issue

Because of the amount of research and science involved in finding the right bio-based material and creating SCHURTER's Green Line, the products are somewhat on the higher end of the price range for similar products in the market. But Mühlemann notes that they are on a level that can be introduced in the market.

"The two cost considerations are the raw materials that are pretty much more expensive than traditional petroleum-based products, and all the development that we have to put in," he explains. "And when we see economy of scale kicking in in the bio-based market, then we will see petroleum-based products and our

Green Line products become level from a price perspective. And by the way, at SCHURTER, we do not pass all the rising costs to the customers."

And he notes that if a company is really serious about their decarbonization strategy, such a price difference will be minimal compared to the overall impact of adopting a "green" product in their supply chain.

"And we have proven to the market that it is possible," Mühlemann says. "I would say we are among the first in our industry that offers products like this — high-quality products with a direct reduced CO₂ footprint — into the market."

Barriers of "green" manufacturing

While sustainable manufacturing is on top of everyone's minds, there continues to be plenty of challenges when it comes to the implementation part.

"One issue is the high prices of the bio-based raw material," says Mühlemann. "I am glad that this raw material exists, but the prices have to come down. At the end of the day, that's really one of the biggest hurdles."

Another challenge is the very strict standards that manufacturers must comply with. Mühlemann explains: "Those standards prevent, to some extent, the use of recycled materials today. Because the requirements of the standards are at such high level, it needs this kind of virgin raw material."

The problem here is that with each recycling cycle, a material loses a bit of the property of the base material. "That is why you cannot endlessly recycle materials," says Mühlemann. "Or why a recycled plastic is, in its second life, used for plastic bags, for example, or other materials that do not have those strict requirements."

And finally, there are customers who question the new sustainable products: how green they are, or how sustainable they are, according to Mühlemann.

"To overcome this, we here at SCHURTER are truly transparent and provide the information customers are

looking for on the one hand, and on the other, let the products be analyzed and audited by an independent third-party,” he explains. This shows the customers that not only are the products approved by the standards body, but they were also proven by third-party laboratories about how green they are.

What’s next?

Mühlemann says their Green Line products are just the beginning. “I hope that we achieve a good market adoption of those new products,” he says. “But as we have a broad portfolio of products that are polyamide based, there are many more steps and many more products that will be launched that are based on bioplastics.”

The company will continue to look further for new materials. Mühlemann notes that there are different requirements based on the different products that they offer.

“We’re still in the labs with other new sustainable materials as well, and SCHURTER is committed to driving sustainability not only through our manufacturing processes, but really down to the products. With SCHURTER, you have a partner that cares about the environment.”

And Mühlemann is optimistic. “I think this is the right time for our industry to show the market that we can do this, and that we can go in the right direction and care about our environment even more than we have up to and until now,” he says. “I am happy with SCHURTER—of being a part of an organization that is stepping into the right direction for a safe and secure future.”



Green Line IEC appliance connectors with housings made of plant-based plastics



Marcel Mühlemann, Product Manager at SCHURTER

About SCHURTER

The SCHURTER Group is a globally successful Swiss technology business. With our components ensuring the clean and safe supply of power, input systems for ease of use and sophisticated overall solutions, we impress our customers with agility and excellent product and service quality.

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References / Downloads

[EE Times Asia](#)

[SCHURTER Green Line](#)

[SCHURTER Sustainability Report](#)