Press Release

Plastics and Rubber Machinery

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"Packagings are high-tech, lightweight products"

Frankfurt, 4 June 2019 – Interview with Michael Baumeister, Managing Director Technology and Logistics, Brückner Maschinenbau GmbH & Co. KG in Siegsdorf.

Foodstuffs are a very sensitive commodity; they are packaged to ensure the required hygiene as well as durability. This also saves resources used in the production of foodstuff, such as water and energy. The engineering company Brückner supports the concept of a recycling economy: plastic packaging should be used where it is of direct benefit, relying on easily recyclable film mono-structures. At European level, Brückner is active in the field of sustainability and recycling of flexible packagings by cooperating with Ceflex together with over 100 enterprises from the plastics value-added chain.

How can a company such as Brückner Maschinenbau contribute to circular economy?

Michael Baumeister: We are intensively looking for ways to improve recyclability of plastics products. For example, we address the question of how to produce packages by using easily recyclable mono-structures on the basis of polyolefin that have the properties achieved today with compounds of polyamide, polyester or metallised film which are all difficult to recycle. We practically apply a preliminary stage of circular economy that makes recycling possible for many products in the first place.

Material compounds are often used to make foodstuff more durable. Is this necessary to the degree presently applied?

Michael Baumeister: Packaging films are becoming ever thinner while they retain their protecting function, thus saving more and more raw materials. There are high-tech lightweight products which protect the valuable commodity of food

for as long as possible. It is particularly worthy of protection as the production of foodstuffs also uses many scarce resources, such as great amounts of water and energy. Not least because of this, it is necessary to drastically reduce spoilage of food. Packaging and cooling are decisive factors. Compared with the much higher good *food* the CO2 footprint of packaging is negligible. When it comes to cars or planes consumers welcome lightweight construction parts because they reduce fuel consumption. When looking at packaging, consumers usually do not see this benefit. On the other hand, it will have to be verified if consumers accept packages which are not as smooth and transparent as they are now. At present, the appearance of packages has a strong influence on the buying decision.

The EU is forcing circular economy for plastics. The first bans and regulations are in place. How do you feel about this?

Michael Baumeister: It is important that these regulations apply in the same way to everyone operating in the European market. Otherwise competition would be disrupted. With equal conditions for everyone, nobody would have a commercial disadvantage. As positive result of regulation I would expect essentially more intensive research on recycling possibilities, for example, on chemical recycling. As a consequence, there would be much more serious attempts to produce better recyclates. Because we do not want to down-cycle, that means to manufacture products of lower and lower quality – ranging from film via park benches to briquettes for fuel. The issue is about manufacturing high-quality products from recyclates, such as film which can come into contact with food again. This is extremely difficult to achieve with mechanical recycling due to hygiene requirements. Political specifications necessitate more complex processes for sustaining raw materials, a fact that constitutes the same obstacle for everyone.

Why should film be recycled into film at all? The recycling effort is immense. You need a lot of energy. Wouldn't it be better to make injection-moulded parts from film waste?

Michael Baumeister: From a short-term view, it is presently the cheapest option to turn a high-quality foil into something simple after usage, or to burn it instead of heating oil. In the long term, humankind must manage to become independent of crude oil because its resources are limited. At some point we will have to be able to cover our energy demand completely from renewables. Then energy will no longer be the bottleneck and then it will be very sensible to use energy to obtain raw materials for further utilization. By applying energetically complex procedures such as chemical recycling, single-origin plastics could then be provided for high-grade applications. This way you could preserve valuable raw materials. This is the heart of the recycling economy concept: That no material will be lost.

The layers of plastics in the oceans mainly consist of packaging material. Do we have too much of it?

Michael Baumeister: Meanwhile more than half of the population already live in cities. They have to be fed. That's not possible without hygienic packaging. The main function of packaging is to protect higher-value commodities. But it is also obvious that there is some packaging that is not necessary. The plastics industry has realised that packaging waste is a major problem. The Ceflex consortium of companies is already working hard on this problem. Over 100 firms are currently participating, from raw material providers via machinery manufacturers to those who use films to make the packaging. We actively commit ourselves in three to seven working groups dealing with the design of packaging, the required machine technology and communication with the public.

Wouldn't a working circular economy be the end of organic plastics? We wouldn't really need them.

Michael Baumeister: PLA has been in the market for several years. We have developed adequate machine technology and our machines can process the material. But this material is based on corn starch and is still very expensive. On taking a closer look, the obvious advantages – PLA is not based on crude oil, it is made from a renewable resource and is compostable – are no advantage. The Grüner Punkt (green dot) initiative does not classify PLA as recyclable because there are no closed cycles. It cannot be disposed of in the refuse bin because you can't tell it from ordinary plastic film. They cannot be recycled together with other film materials. With regard to its properties, PLA has no comparable barrier or protection function; that's why it does not replace conventional film. We rather see that polyester of other polyethylene types can be made from renewable raw materials or are added to crude-oil based raw materials, the so-called drop-in, i.e. not really crude-oil based, but no longer compostable. As additive, in the same way as E-10, bio-ethanol is added to petrol. In my view circular economy is not the end of bio-plastics, but they will not play an essential role in the foreseeable future.

In our world, plastics are indispensable. The downside is the littering. Carelessly discarded plastics products condense to form thick carpets, not just on rivers and seas, but also on land. A complete circular economy could prevent this evil and put the focus back on the benefits of plastics. In order for this to be a success, we all need to work together: processors, raw material manufacturers, mechanical engineers and recyclers, but also brand owners, end consumers and politicians.

VDMA will shine the spotlight on circular economy at the leading K 2019 trade fair in Düsseldorf in October and show how closed loops can work effectively. Throughout the process, stakeholders will be having their say in a series of interviews in the run-up to this international industry event.

CIRCULAR ECONOMY @ K

Plastics shape the Future

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About VDMA Plastics and Rubber Machinery

More than 230 companies are members of the association, covering more than 90 percent of the industry's production activities in Germany. Ten percent of our member companies come from Austria, Switzerland and France. The German member companies represent sales of EUR 7 billion in core machinery and EUR 10 billion including peripheral technology. Every fourth plastics machine produced in the world comes from Germany; the export rate is 70 percent. Ulrich Reifenhäuser, Member of the Management Board of the Reifenhäuser Group, is the chairman of the association.