Focusing on Flexibles

An Initiative Aims to Prevent Multi-Layer Packaging from Becoming Waste

Flexible films are extremely light-weight, easy to decorate, and are, therefore, often the first choice for packaging material. However, recycling them is considered a problem – they often end up in being incinerated for energy production, or even in the garbage dump. A consortium of industrial companies wants to change that.

This last spring, the Ceflex Initiative was founded to address the recycling of flexible packaging. Currently, 38 members are participating in the project that is organized in seven working groups and providing 4000 to 8000 EUR annually for project preparation and management. Further sources of funding will be developed for the actual realization, for example, via EU support mechanisms. Dr. Gerald Rebitzer, who is responsible for the area of sustainability at Amcor Flexibles, chairs the Steering Committee of Ceflex and represents the packaging companies. We spoke with him about goals and opportunities for the initiative.

Kunststoffe: *Dr. Rebitzer, how did Ceflex come about?*
Dr. Gerald Rebitzer: It has two predecessors, both of which came to an end in 2016. The Fiace Project was intended to demonstrate the value of flexible packaging, since it is often faced with criticism in the course of recycling discussions despite a high level of efficiency that makes these materials environmentally preferable. Even when not recycled, they generally have a lower environmental impact than container packaging, even when the latter is 100 % recycled, since they use only 10–20 % as much material. The debate about wastes centers around reduction, for example avoidance of waste, and flexible packaging is very strong here. However, due to the minimal use of material, and partly due to materials mixtures, recycling it presents very different challenges than PET beverage bottles, for instance.

Kunststoffe: *The second predecessor project dealt with this topic.*
Rebitzer: Yes, the Reflex Project initiated in England investigated to what extent flexible packaging is technically recyclable. Tentative recycling guidelines were developed comparable to those for PET bottle recycling, e.g., what materials or partial components have to consist of. Their findings regarding the materials composition of flexible packaging, although exemplary for Great Britain, were representative. The prevailing opinion is that flexible packaging always contains three or four different plastics, as well as aluminum, paper, and certain barrier materials. The targeted investigation of waste streams within the framework of the project produced the surprising result that some 70–80 % of all flexible packaging actually consist mainly of polyolefin-based materials.

Kunststoffe: *Do you expect that these values are similar in other European countries?*
Rebitzer: That's what we assume. The Fiace Project looked at the same data for the Netherlands, and it came to very similar results. The potential for recycling by using existing technologies is very high – much greater than it is often thought to be. When people think about flexible packaging, they mean PET-aluminum-PE-composites and similar things. In fact, this applies to only some 20–30 % of all use cases, whereas most of them consist of polyolefins, PP, PE, and mixtures of these. That can be recycled mechanically right now. As for the remaining 20–30 % of flexible packaging, there are solutions for some, and there will be more in the future, e.g., based on pyrolysis or chemical recycling processes.

Kunststoffe: *Even so, a lot of theoretically recyclable post-consumer material ends up being used for energy production due to high cost and effort for recycling.*
Rebitzer: That is true. However, there are already polyolefin recyclers in Germany who say they could actually process much more, since polyolefins are a popular input material. Here, work has to be done above all for extensive separate collection of all packaging, in order to make the materials available for recycling. On the other hand, energy production shouldn't be demonized. In the end, what is needed is a meaningful mixture of recycling and recovery technologies for different material streams that will change in time due to technological progress and the creation of new infrastructures. The goal of Ceflex is to recycle more and more, but in the long term, energy production will also have its place in the overall mix.

Kunststoffe: *How does Ceflex want to improve the situation?*
Rebitzer: Ceflex's goal is to present guidelines for flexible packaging that are recognized across Europe by 2020. The first documents will come out in 2018, and such documents naturally undergo further development.

Kunststoffe: *Non-binding guidelines aren't very effective, are they?*
Rebitzer: They aren't binding, but they help avoid complications during recycling, such as those due to PVC content or black

packaging that cannot be distinguished independently of the material when sorted. For PET bottles, systems and guidelines have been in existence for a long time, but not for flexible packaging. Reflex was a beginning, and Ceflex now carries that further and will bring it up to a European level.

Kunststoffe: *What else was learned from Reflex?*
Rebitzer: It is a great opportunity for companies across the entire value chain to get involved and bring in their know-how. Traditionally, for example, the opinion of the recyclers was overlooked. The reason for that was that many recycling companies are very small players compared to the material manufacturers and consumer products producers. But we have to get them in the boat, if recycling is going to work. In the past, there were hardly any agreements between processing companies, materials manufacturers, and recyclers. In Ceflex, they can all reach a consensus, so that material manufacturers produce suitable materials, packaging producers process them, consumer goods manufacturers use them, and recyclers actually receive useable input material for which there is a market.

© Amcor

"Ceflex's goal is to present guidelines for flexible packaging that are recognized across Europe by 2020."

Kunststoffe: *How completely is the value chain represented?*
Rebitzer: For most of the steps, relevant actors are represented. A group that we would still like to include is the retail chains.

Kunststoffe: *How do you intend to proceed?*
Rebitzer: The focus at first will be on the big polyolefin stream. The guidelines are intended to help design packaging and decide what barrier materials and pigments to choose, which materials to select, and which ones should be avoided. It isn't a question of prohibiting, but of informing in order to increase the amount of packaging that is later available for recycling. It is also important to quantify the materials streams. Since the quantity of these materials is not so large, there is a problem in that the decision of a few large manufacturers to use certain recyclates for new products can deplete the market.

Kunststoffe: *What is the reason for that?*
Rebitzer: One reason is the often inadequate collection systems in many countries, and another is that hardly anyone has studied this "raw material" thoroughly, so in the end there is hardly any of it. For historical reasons, the plastics industry is organized differently from other materials industries such as those for steel, aluminum, or paper, where the recycling and primary industries are one-and-the-same, and so they form an integrated system. There is still a lot to be done, and the value chain approach is intended to help.

Kunststoffe: *And what will stand at the end of the project?* »

Personal Details

As Director Sustainability, **Dr. Gerald Rebitzer** is Head of Sustainability at Amcor Flexibles Europe, Middle East and Africa and Amcor Flexibles Americas. From 2007 to 2009 he was Head of Product-Related Sustainability at Alcan Packaging, globally. Gerald has over 20 years of experience in implementing sustainability initiatives and life cycle approaches in different sectors. Among other leadership roles in industry groups, Gerald is currently chairman of the steering committee of the Ceflex project (Circular Economy for Flexible Packaging) and leads a standardization effort for recycling of flexible packaging within the New Plastics Economy Initiative of the Ellen MacArthur Foundation. He has published more than 120 papers in the areas of life cycle thinking and sustainability.

Rebitzer: In addition to recycling guidelines, we will present useable technologies, infrastructure and business models, as well as final markets for recycled materials. It is our goal that flexible packaging will be collected as extensively as possible and brought to recycling.

Kunststoffe: *How will you get there?*
Rebitzer: To do so, we will need legislative developments, since collection and sorting will cost more than the recycled material earns. But our purpose is a proactive contribution by the industry. Industry has to accept responsibility. It must point out which collection and recycling systems are effective, i.e., financially sound, and on the other hand have advantages from an environmental perspective. What we want is to create a system that makes sense overall.

Kunststoffe: *Is a system imaginable that pays for itself and incurs no additional costs?*
Rebitzer: In my opinion, that is unrealistic, it will not work. It seems more sensible to me to look for ways to cover the costs so that collection and recycling actually take place in all countries. There is in fact a broad consensus that clean drinking water and sensible sewage systems are necessary – things that have to be paid for. They belong to "societal hygiene", so to speak, no one questions whether they are worth it. The consortium is also trying to work in this direction.

Kunststoffe: *Do we still need progress on the technology side in order to advance the topic?*
Rebitzer: In countries like Germany, the level of recycling technology used is very high, and, partly due to that, the costs that consumer goods producers have to carry are considerably higher than in other countries, such as Great Britain. To be sure, the systems cannot be compared from the point of view of financing, nor with the recycling results achieved. Technological progress always helps, but it is less a question of developing entirely new technologies than of making recycling more economical and lowering its cost.

Kunststoffe: *What influence on practice will the recycling rates have that still have to be agreed on at a European level in the Circular Economy Package?*
Rebitzer: The previously valid recycling rates for all plastics can be easily fulfilled by PET and in part by PE milk bottles due to the great mass of these packaging types. Genuine incentives are created, therefore, only by higher standards that I, personally, would welcome. Flexible packaging in particular would then have to make its own contribution. That would push the Ceflex Initiative forward.

Kunststoffe: *What is your answer to the charge of Greenwashing, i.e., that with such initiatives the industry is only engaging in activism to calm the public and forestall legislative regulation, but does not want to produce substantial results?*
Rebitzer: Whether we will be successful, no one can guarantee at this point. But there is strong motivation for it in Ceflex. And it is really not an organization lobbying to prevent legislation, but an industry group that, together with legislation, wants to help actually implement sensible solutions. ■

Interview: Dr. Karlhorst Klotz, Editor

Further Information:

Ceflex:
- https://ceflex.eu

Fiace:
- https://ceflex.eu/public_downloads/FIACE-Final-report-version-24-4-2017-non-confidential-version-Final.pdf

Reflex:
- www.reflexproject.co.uk

Service

Digital Version
- A PDF file of the article can be found at *www.kunststoffe-international.com/3882910*

German Version
- Read the German version of the article in our magazine *Kunststoffe* or at *www.kunststoffe.de*