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Potential packaging waste prevention by the usage of flexible packaging and its consequences for the environment

Executive summary

commissioned by Flexible Packaging Europe (FPE)

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The EU Packaging and Packaging Waste Directive aims at preventing the production of packaging waste and, as additional fundamental principles, at reusing packaging, at recycling and other forms of recovering packaging waste to reduce the overall quantities of such waste going to final disposal [EC 1994]. It follows the waste management hierarchy of the European Commission's Waste Framework Directive by giving priority to prevention before other approaches like reuse, recycling and recovery. The European Commission requires that: "Packaging shall be so manufactured that the packaging volume and weight be limited to the minimum adequate amount to maintain the necessary level of safety, hygiene and acceptance for the packed product and for the consumer." [EC 1994]

This requirement may be fulfilled in most cases by the usage of flexible packaging solutions as these are typically light weight in comparison with non-flexible packaging solutions.

In order to verify the assumption that a replacement of non-flexible packaging by flexible packaging solutions leads to prevention of waste and less consumption of resources, Flexible Packaging Europe (FPE) commissioned the Institute for Energy and Environmental Research (IFEU) to prepare a study about the waste prevention potential by the usage of flexible packaging and its consequences for resource efficiency and climate change.

The amount of primary packaging waste that could be reduced by such a substitution is calculated as 26.48 million tonnes per year. This is more than 60% of the total annual amount of primary packaging waste in EU and clearly demonstrates just how resource efficient flexible packaging is.

By using a life cycle assessment approach this study shows that a potential substitution of all non-flexible packaging used for non-beverage FMCG goods by flexible packaging solutions would improve total Global Warming Potential (GWP) and Abiotic Depletion (ADP) results of all European FMCG primary packaging by about 39% even if it is assumed that no material recycling processes for flexible packaging would take place.

Additional scenarios modelled with different recycling rates for non-flexible packaging show that higher recycling rates lead to lower GHG emissions and less resource consumption. Although even with a hypothetical recycling rate of 100% for non-flexible packaging the GWP and ADP results of non-flexible packaging would still be considerably higher than those of flexible packaging.

It becomes evident that the improvements regarding Global Warming Potential and Resource Consumption by substituting non-flexible packaging by flexible packaging are considerably larger than those achieved by increasing the recycling rate of packaging waste.

The authors therefore recommend to not only focus on achieving recycling targets but also on the prevention of primary packaging. This will not only lead to less primary packaging waste but also to a much better performance in regard to Climate Change, Use of Water and Resource Efficiency which might be achieved by the substitution of non-flexible packaging by flexible packaging.