

PUBLIC CONSULTATION ON THE CIRCULAR ECONOMY

CONTRIBUTION BY THE

EUROPEAN FLEXIBLE POLYURETHANE FOAM INDUSTRY

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Europur is the European Association of Flexible Polyurethane Foam Blocks Manufacturers. Our members operate over 50 manufacturing plants in 24 countries of Europe and employ over 17,000 people. While there are a few multinational players in our industry most of our member companies are small and medium enterprises.

Flexible polyurethane foam ('PU foam') is a **thermosetting plastic**¹. It is used in a very wide range of durable applications, notably in mattresses, upholstered furniture and in vehicles. As an example, nearly 90% of mattresses produced in the EU contain polyurethane foam (between 2 and 15 kg per unit) and over 90% of furniture upholstery is made of PU foam. The EU's production of flexible polyurethane foam is of around 900,000 tonnes per annum.

EUROPUR welcomes the European Commission's initiative to further instate a circular economy in Europe and – as a sectoral trade association representing part of the plastics family – **supports the "Zero Plastics to Landfill" initiative** of PlasticsEurope. To achieve this objective, as the proportion of waste being landfilled is still important in some Member States, we consider that the European Union should strongly **encourage investments into waste treatment facilities** (via integrated waste management including mechanical recycling, chemical or feedstock recycling and energy recovery).

Our industry has made great efforts already to improve its **resource efficiency at the production stage**. Today, nearly all production and conversion waste is recycled. Between 2005 and 2015, our industry has reduced its energy consumption by 8% and CO₂ emissions by 24%².

While PU foam producers are rarely placing finished goods on the market but rather are intermediaries in the supply chain, we are committed as an industry to positively participate and contribute in the debate about instating a circular economy. We believe this debate should take into account the environmental and socio-economic performance of end-of-life PU foams without contradicting environmental, health and safety requirements during their production and use phase.

¹ Thermosetting plastics are plastics containing polymers that cross-link during the curing process to form an irreversible chemical bond. Contrary to thermoplastics, they can therefore not be merely heated / melted for recycling.

² The Ecoprofile for Flexible Polyurethane Foam, Thinkstep, 2015

This will require taking into consideration the technical, environmental and socio-economic aspects of our products' lifecycle, including issues such as eco-design, durability, separate collection and dismantling, and evaluating the most sustainable re-use, recycling and recovery options.

Among the challenges that our industry is currently facing in the context of instating a circular economy we would like to highlight the following:

- The **eco-design** of PU foam containing products will require proactive cooperation in the supply chain to develop new products and new production process and, not to be neglected, to gain consumer acceptance for these new products. We believe that eco-design should focus on the entire lifecycle of a product and not only on its end of life.
- **Re-use** of post-consumer use flexible polyurethane is in theory possible. But most PU foam containing products have a lifetime of over 10 years. This means that end-of-life foam could contain a number of substances that have been banned since the foam was produced, preventing the foam from being used in new products and placed on the market again. Also, other issues such as loss of performance or biological / chemical contamination and competition with the use of our production waste in markets that are quite limited need to be considered. As a result, there is virtually no demand today for re-using end-of-life flexible polyurethane foam and in the future, due to loss of performance over time, it may be limited to low end / technically basic markets. It should also be noted that consumers are not keen on using products containing EoL foam, notably for comfort applications such as mattresses.
- **Mechanical recycling** is a challenge that should not be underestimated for our industry. Indeed, one of the characteristics of thermosetting plastics is that they contain polymers that cross-link during the curing process, to form an irreversible chemical bond. This means that at the end-of-life of stage, contrary to thermoplastics, they cannot be merely melted and re-used.
- To overcome this difficulty, there is research being performed for the **feedstock recycling** of post-consumer flexible polyurethane foam, with a focus on chemical recycling or gasification. So far, none of the research projects under way have yet reached market application stage and their technical and economic feasibility still needs to be demonstrated. We would encourage EU Institutions to stimulate further research into such recycling technologies, which would benefit multiple sectors.
- To facilitate recycling, we realize that **extended producer responsibility** (EPR) schemes for PU foam containing products will need to be established. There are a few initiatives currently taking place in a number of Member States in that regards. Considering that our industry is operating at the level of the internal market, we would advocate for the fact that such schemes be as similar as possible from one Member State to another, in order to avoid that SMEs are confronted with a too high administrative burden when seeking to comply with the requirements of different schemes.

We are committed to addressing these challenges together with the other stakeholders in our supply chain, notably by supporting research where appropriate. However, until recycling technologies reach market stage and the economic, environmental and legal aspects linked to the re-use of PU foam are solved, **waste-to-energy** will remain the preferred end-of-life option for flexible polyurethane foam and the main driver allowing for diverting PU-foam containing products from landfills. Indeed, waste-to-energy is a complement to recycling in an integrated waste management system for products which cannot (yet) be recycled in a sustainable way, considering notably environmental aspects, energy and resource consumption.

We therefore call on EU Institutions to accept waste to energy as a legitimate waste treatment solution for products that are currently less recyclable and to encourage research into promising recycling technologies for thermosetting plastics.

For more information

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