

The EPS Packaging Industry and its contribution to the EU Circular Economy Action Plan 2030

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Introduction to EU Circular Economy Package

1.1 Definition of Circular Economy according to the EU.

“To ensure sustainable growth for the EU we have to use our resources in a smarter, more sustainable way. It is clear that the linear model of economic growth we relied on in the past is no longer suited for the needs of today’s modern societies in a globalised world. We cannot build our future on a ‘take-make-dispose’ model.

Many natural resources are finite, we must find an environmentally and economically sustainable way of using them. It is also in the economic interest of businesses to make the best possible use of their resources.

In a circular economy the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value...”¹

Although the main focus was initially on waste management, the action plan now also includes ecodesign, production processes and product usage.

1. EU Press release 2 December 2015,
http://europa.eu/rapid/press-release_MEMO-15-6204_en.htm, retrieved
10. May 2017

Introduction to EU Circular Economy Package

1.2 Action Plan – Overall goals and milestones

- A common EU target for recycling 65% of municipal waste by 2030;
- A common EU target for recycling 75% of packaging waste by 2030 (55% of plastic packaging);
- A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030;
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- Concrete measures to promote re-use and stimulate industrial symbiosis - turning one industry's by-product into another industry's raw material;
- Economic incentives for producers to put greener products on the market and support recovery and recycling schemes (e.g. for packaging, batteries, electric and electronic equipment, vehicles).²



2. EC Circular Economy website:
http://ec.europa.eu/environment/circular-economy/index_en.htm retrieved
10 May 2017

Introduction to EU Circular Economy Package

1.3 The “Plastics Strategy” and industry consultation

The European Plastics industry is an important economic driver. Representing 60,000 companies, mostly SME's, with a turnover of 320 billion Euro.

In Europe, packaging applications are the largest sector for the plastics industry and represent almost 40% of the total plastics demand; followed by building and construction applications with 20% of the total demand.

The plastics industry is one of the priority sectors in the EU program, and as such, the EPS packaging industry welcomes the Circular Economy Action Plan by the EU and its Strategy for Plastics because the industry can contribute and is contributing to meeting these goals.

Consultation with the industry is on going, most recently at a Stakeholder Conference in March 2017.

To ensure that the Circular Economy becomes a success in the plastics sector, we request that the European Union

- does not discriminate against any plastic to the disadvantage of others to allow fair competition so that producers can choose the packaging most suitable for their needs,
- does ensure a life-cycle approach in legislation, taking into account packaging functionality, such as preserving the entirety of resources invested in the packaged product along the value chain
- does set realistic and achievable reuse / recycling targets

2. The European EPS Packaging Industry

2.1 Key facts and introduction to airpop® engineered air.

The European airpop® packaging industry comprises about 200 mainly small and medium sized converters. The production of packaging applications and moulded parts represents 20% of total demand.

EPS is a valuable and unique resource, especially in its effect relative to its material consumption (2% polystyrene, 98% air); a scientific discovery that dates back to 1952. No material has been created like it – so far. In Europe we refer to this material as airpop® and it is the smartest way of engineering air.

- Representing only 1.3% of the global plastic packaging materials, airpop® is a **specialist product for specific packaging applications** across a variety of businesses and applications – from high value and heavy household appliances to sensitive foodstuff and pharmaceuticals.
- Many European businesses rely on airpop® to protect their products throughout the logistics chain.
- Without airpop®, products would spoil in the long, complex and demanding supply chains. It effectively prevents damage during transportation and thus avoids spoilage costs to businesses, consumers and the environment.
 - » Imagine vital pharmaceuticals being spoiled during transportation due to extreme temperature differences.
 - » Imagine salmon shipments rotting during transportation because they are not insulated properly.
 - » Imagine the cost of replacing a broken TV or electronic device that has not been properly cushioned with smart airpop® packaging and the hassle for the retailer and consumer.
 - » Imagine your child's head not being protected by a helmet insulated with airpop®.

3. How our industry contributes to the EU Action Plan

3.1 Introduction to industry approach.

The EPS industry advocates and implements a lifecycle approach; from design, to production of the product and packaging, to the distribution and consumption of the packaged product and finally the collection and recycling of the used packaging and its subsequent reuse.

Our industry pledges support in meeting the goals set by the EU in its Circular Economy Action Plan as detailed in this document. Specific contributions are related to the Action Plan goals.



3. How our industry contributes to the EU Action Plan

3.2 During the design phase

GOAL: BETTER PRODUCT DESIGN

“Better product design can help save precious resources.”

(EU Factsheet Circular Economy, Closing the Loop)

Our contribution:

- **Smartest way of engineering air:**
The packaging material airpop® is in itself a smart use of resources. It consists of 98% air and only 2% high-value polystyrene, which is suitable for recycling up to 7 times at end-of-life.
- **Smart material design:**
Smart packaging design and the versatility of the material means it can be moulded in different strengths and performance levels to protect those parts of the product that are subject to wear and tear during transportation, thereby saving on costs and packaging volume. An example is white goods packaging where only certain key parts of the washing machine (corners) are packaged with airpop® parts. In average the airpop® packaging is 50% lighter than a packaging made of alternative materials. A smart packaging design also contributes to waste prevention programs.
- **Ecodesign Initiative:**
The “Round Table Eco Design of Plastic Packaging” is an initiative of experts from companies along the entire value chain of plastic packaging as well as scientific and consumer protection organisations. The goal of the Round Table is to promote the Eco Design of plastic packaging, principally by preparing guidelines and recommendations for the players in the value chain. ³

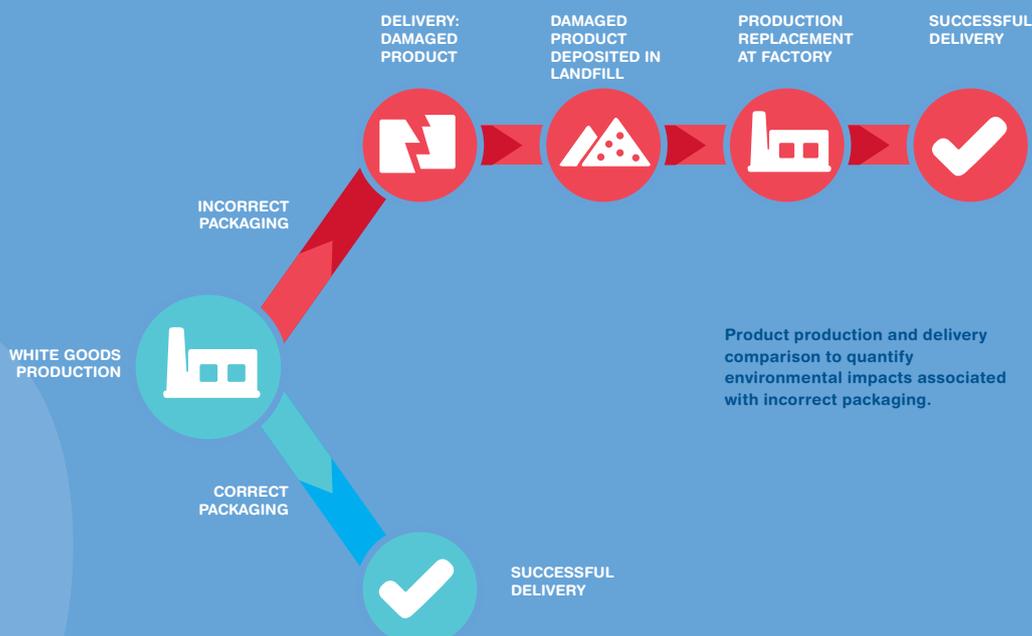
³ <http://ecodesign-packaging.org/en>

3. How our industry contributes to the EU Action Plan

3.2 During the design phase

Damage avoidance saves resources:

- For transportation of high value items, damage avoidance is the top priority. In drop tests, vibration tests and other performance data, airpop® gives best protection thanks to its outstanding cushioning properties. The average transport damage rate is well below 1%. As a matter of principle, much more energy is saved through damage avoidance than the energy used for the entire lifecycle of packaging.
 - » Example: The energy consumption to produce a washing machine requires 200 times more energy than the production of the protecting parts. Not to mention the costs and efforts to replace the damaged device.
 - » Example: Food packaging accounts for 5 to 10 percent of the ecological footprint and over 90 percent relates to manufacturing, transport, storage and the preparation of the food. It effectively prevents food wastage.
- Transportation: airpop® tends to weigh up to 4x times less than other packaging materials. No wonder when it is made of 98% air. That reduces fuel consumption and CO₂ emissions.



3. How our industry contributes to the EU Action Plan

3.3 During the production phase

GOAL: IMPROVED PRODUCTION PROCESS.

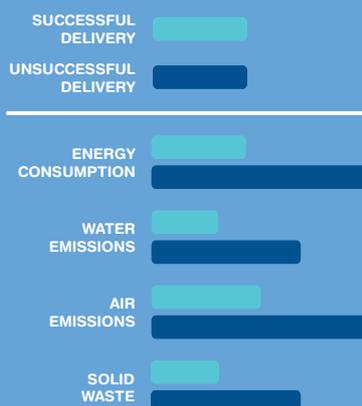
“In order to reduce resource use and waste generation in production processes, the Commission will promote best practices in a range of industrial sectors through Best Available Techniques Reference documents (BREFs) for various industrial sectors.”

(EU Factsheet Circular Economy, Closing the Loop)

Our contribution:

- **airpop saves production resources:** Compared to airpop[®], moulded products require 33% more water. Moulded pulp packaging also consumes approx. 70-115% more energy, results in between 9-31% more air[®] pollution, and emits approx. 330 % more greenhouse gas.
- **airpop packaging converters have improved production processes and introduced smarter technologies to meet customer expectations and to save on costs and resources.** In particular, energy efficiency of plant technology and machinery has improved considerably. The energy efficiency has increased on average by 50% over the last 20 years. ISO 14000 certifications, the use of eco management instruments and Green Procurement procedures have steadily increased across the industry. EUMEPS is committed to advising its members on the BREF requirements.

When visualized, the necessary consideration factors for choosing the correct packaging become clear: package performance, environmental impact during lifecycle, and recycling options are all key in making the right choice.



3. How our industry contributes to the EU Action Plan

3.3 During the production phase

GOAL: IMPROVED PRODUCTION PROCESS.

“industrial symbiosis – a process by which the waste of one company can become the resource of another company.”

(EU Factsheet Circular Economy, Closing the Loop)

Our contribution:

- **airpop packaging waste is a valuable resource** and dedicated recycling companies collect the waste to produce other applications. It is traded at approx. 250 Euro/tonne depending on raw material prices. Retailers and collectors are actively participating in this business.
- **Leading in innovation:** The European EPS industry is currently one of the only players in the plastics industry to think further than conventional recycling. With the innovative new approach being applied at the PolyStyreneLoop project, there is potential to generate high quality upcycled material from EPS waste in the future, in particular from material containing additives⁴.

4. For more information: <http://polystyreneloop.org>.

3. How our industry contributes to the EU Action Plan

3.4 Waste Management Initiatives

“Europe currently loses around 600 million tonnes of waste materials, which could potentially be recycled or reused. Only around 40% of the waste produced by EU households is recycled, with recycling rates as high as 80% in some areas, and lower than 5% in others.”

(EU Factsheet Circular Economy, Closing the Loop)

GOAL: A COMMON EU TARGET FOR RECYCLING MUNICIPAL WASTE OF 65% BY 2030.

Our contribution:

- The national EPS Industry associations, together with other Plastics Associations are committed to supporting national initiatives on waste disposal and educating consumers on the importance of re-use and recycling of packaging material.

GOAL: A COMMON EU TARGET FOR RECYCLING PLASTIC PACKAGING WASTE OF 55% BY 2030.

Our contribution

- In 2014, 67% of airpop was recycled or value recovered through incineration.
- The EPS Packaging Industry welcomes the targets set for higher recycling rates, provided these targets are realistic and achievable and refer to specified end-points as measured with harmonized calculation methodologies. Such methodologies need to reflect the product's full life cycle deliveries, when packaging EPS fulfills societal needs such as lightweight materials, physical protection of delicate and valuable goods, food protection where cold chains need to be preserved, be it for fish, fruit or vegetables. To achieve this goal, the EU should facilitate the dialogue on the benefits of a successful waste management and recycling system and to support the set-up of the necessary infrastructure in regions where needed.

3. How our industry contributes to the EU Action Plan

3.4 Waste Management Initiatives

GOAL: A BINDING LANDFILL REDUCTION TARGET OF 10% BY 2030.

Our contribution:

- The EPS Industry supports a landfill ban for plastic packaging. Energy recovery remains a complementary end-of-life option – for those materials that cannot be sustainably recycled because the material resp. the packaging is too dirty and contaminated. The transition from landfill to recycling and energy recovery will require long-term integrated waste management planning.

GOAL: EXTENDED PRODUCER RESPONSIBILITY (EPR) SCHEMES

Our contribution

- The EPS Industry already supports EPR schemes, as part of the value chain in packaging production, e.g. in the white goods industry. Schemes have the potential not only of covering the cost of recycling infrastructure, but also of creating a business case for material re-usage. Another example is fish boxes. To extend these schemes, basic requirements of the national EPR schemes should be harmonized throughout Europe, such as costs.



3. How our industry contributes to the EU Action Plan

3.5 Turning waste into new resources

“Smart design and proper sorting can increase the recycling rates of plastics and avoid landfilling, incineration and use of virgin materials. The Commission will elaborate a strategy addressing issues such as recyclability, biodegradability, the presence of hazardous substances of concern in certain plastics, and marine litter.”

(EU Factsheet Circular Economy, Closing the Loop)

Our contribution:

- **Leading in innovation:** The European EPS industry is currently one of the only players in the plastics industry to think further than conventional recycling. With the innovative new approach being applied at the PolyStyreneLoop project, there is potential to generate high quality upcycled material from EPS waste in the future, in particular from material containing additives.
- **Marine litter commitment:** The EPS Industry pursues marine litter solutions by continuing to support the initiative zero plastic to landfill and promoting the separate collection and recovery of all packaging waste. By engaging in activities to prevent plastics' marine litter the industry wants to ensure that EPS waste does not contaminate either rivers or seas in any form and shape.
- **Proven recycling and reusage options.**
 - » Reuse in the production process via collection points throughout the supply chain, as recovering high quality airpop® waste has a commercial value.
 - » Lower value material is recycled for construction material applications. It is often shredded and added to new applications, no further energy input required.
 - » Energy recovery: 1 kg of incinerated EPS replaces 1.3 litres of heating fuel.

3. How our industry contributes to the EU Action Plan

3.6 Consumer education and communication

“New measures will be proposed to improve consumer information about the energy efficiency of products, the raw materials used in their production, and the possibilities for recycling at the end of their life.”

(EU Factsheet Circular Economy, Closing the Loop)

Our contribution:

- **Full commitment to education initiatives:**
The EPS Industry, its national associations and representation at European level, have shown a long-standing commitment to consumer education regarding recycling and packaging materials footprint based on a lifecycle approach. Educational initiatives encourage environmentally friendly behavior and the need for individuals to support Circular Economy initiatives on a local and national level to meet the Action Plan goals for 2030.
- **Transparency on the ecological footprint of airpop**
This table shows the results of a life cycle analysis that made a comparison of airpop® with other materials. The data demonstrates that airpop® packaging has much less impact on the environment than other competitive materials for the same use. Source: BPF, Expanded Polystyrene (EPS) and the environment.

PACKAGING MATERIALS	airpop®	wood, paper, etc.
COST	1	1-3
WEIGHT	1	6-4
ENERGY CONSUMPTION	1	2-0
VOLUME OF SOLID WASTE	1	1-2

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