

## 1. Introduction

The European Manufacturers of EPS (EUMEPS) represent the Expanded Polystyrene industry in Europe across the full supply chain from raw material producer to converter, manufacturer and recycler. All are working in partnership to ensure that the beneficial properties of the material are leveraged throughout its lifecycle. Current recycling initiatives will be accelerated and extended to ensure circularity aligned with EU objectives by 2030.

The EUMEPS Pledge is a step towards this goal, demonstrating our ambition and commitment to accelerating our current programme of recycling.

### EUMEPS and the European EPS Industry

23

National Associations

1.8

million tonnes EPS total market

>90%

EU EPS supply represented



60,000

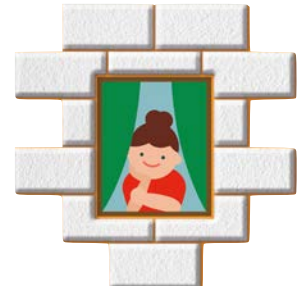
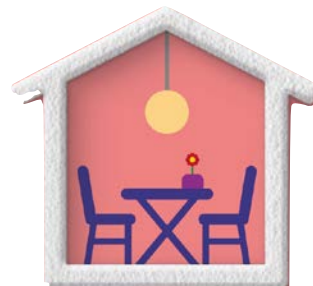
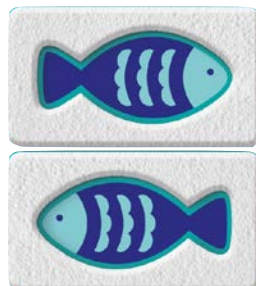
ca. 1,000  
mainly SMEs



5-6

billion EUR sales

EPS is a particle foam\*, most often moulded. It 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. It is a unique and versatile material. Its protective and lightweight properties make it particularly suitable for both insulation of buildings and protection of goods.



In both of these main applications, lifecycle considerations and recycling opportunities have been an ongoing priority for the European association and its members, working on best practice initiatives in many markets.

Current and future initiatives require the support of policy makers to establish a fertile fiscal and regulatory environment to achieve circularity. This includes the need for comprehensive recycling schemes, for all materials, where all value chain participants are required to contribute equitably.

The EUMEPS Pledge sets out our commitment to recycling targets. Further, it specifies the assumptions that these targets are based on.

\*EPS is one of the many products made from styrene monomer and polystyrene. These are all based on styrene polymer but are organised in different industries to market and sell products. e.g. compact PS, GPPS, ABS, HIPS, XPS. There is some overlap in application areas (e.g. building and construction, packaging) but the individual products are engineered for specific applications. However, some potential exists for recycled polystyrene to cross styrene industries (e.g. EPS to XPS for construction insulation, EPS to PS for packaging) hence overlapping circularity loops.

## 2. Our Pledge

Object	Polymer	Baseline	Pledge	Quantities 2025 /MT (estimates)		Quality	New Technologies involved
				Waste EPS	Recycle		
Insulated Packaging (e.g. fish boxes)	EPS	Conversio Study 2017	50 %	140,000	70,000	High quality EPS	Food grade quality potential (EPS SURE)
Protective Packaging (e.g. appliances)	EPS	Conversio Study 2017	50 %	230,000	115,000	Standard EPS	
Building Deconstruction	FR-EPS EPS	Estimated 2025 market	27 %	150,000	40,000	High quality EPS	PolyStreneLoop – HBCD removal and recycling of bromine and chemical recycling.
New build and renovation	FR-EPS EPS	Conversio Study 2017	80 %	40,000	32,000	Standard EPS	
Civil Engineering New build and Deconstruction	EPS		90 %				
<b>TOTAL</b>			<b>46 %</b>	<b>560,000</b>	<b>257,000</b>		

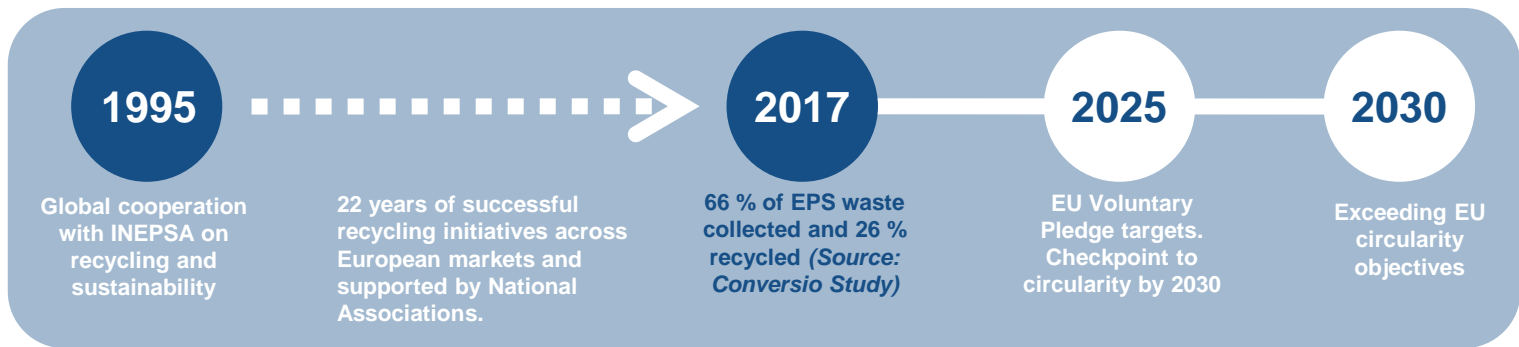
FR = Flame Retarded

The chemical industry is starting to develop methods for the conversion of plastic waste into raw material for chemical processes (e.g. cracker feed). Success of such developments would mean that we could recycle even more heavily contaminated EPS packaging within the medium term.

### Pre-conditions to meeting the pledge

- ✓ Fiscal and regulatory framework supporting a level playing field for all materials with an equal opportunity for all materials to demonstrate circularity. No discrimination against plastics.
- ✓ Time to give industry a chance to find solutions for recycling logistics and technologies where they do not currently exist..
- ✓ Recognised benefits of plastics for many applications (e.g. energy efficiency of buildings with associated mitigation of greenhouse gas emissions, seismic insulation, food preservation, transport damage protection).
- ✓ Objective environmental impact considerations (e.g. LCAs) as key driver for material choice in any application. Current recycling levels should not be taken as the selection criteria.
- ✓ Understanding of the need for customized solutions by polymer, by application, by country/region.
- ✓ Support of Member States and local authorities to work with industry to provide adequate logistics and technologies for collection, sorting and recycling of all materials, including foamed plastics.
- ✓ Collection, sorting and recovery schemes should have the requirement that the value chain participants contribute equitably, both financially and practically. Such schemes will be determined by application and by national and local conditions.
- ✓ Encouragement and support for industry to invest in new technologies and innovations for recycling.
- ✓ On-going education of society about correct behavior for not littering and disposal of materials at end of use.

### 3. Commitment to circularity







The EU Plastics Strategy is a catalyst for EUMEPS and its membership to accelerate their efforts.

This will be done by:

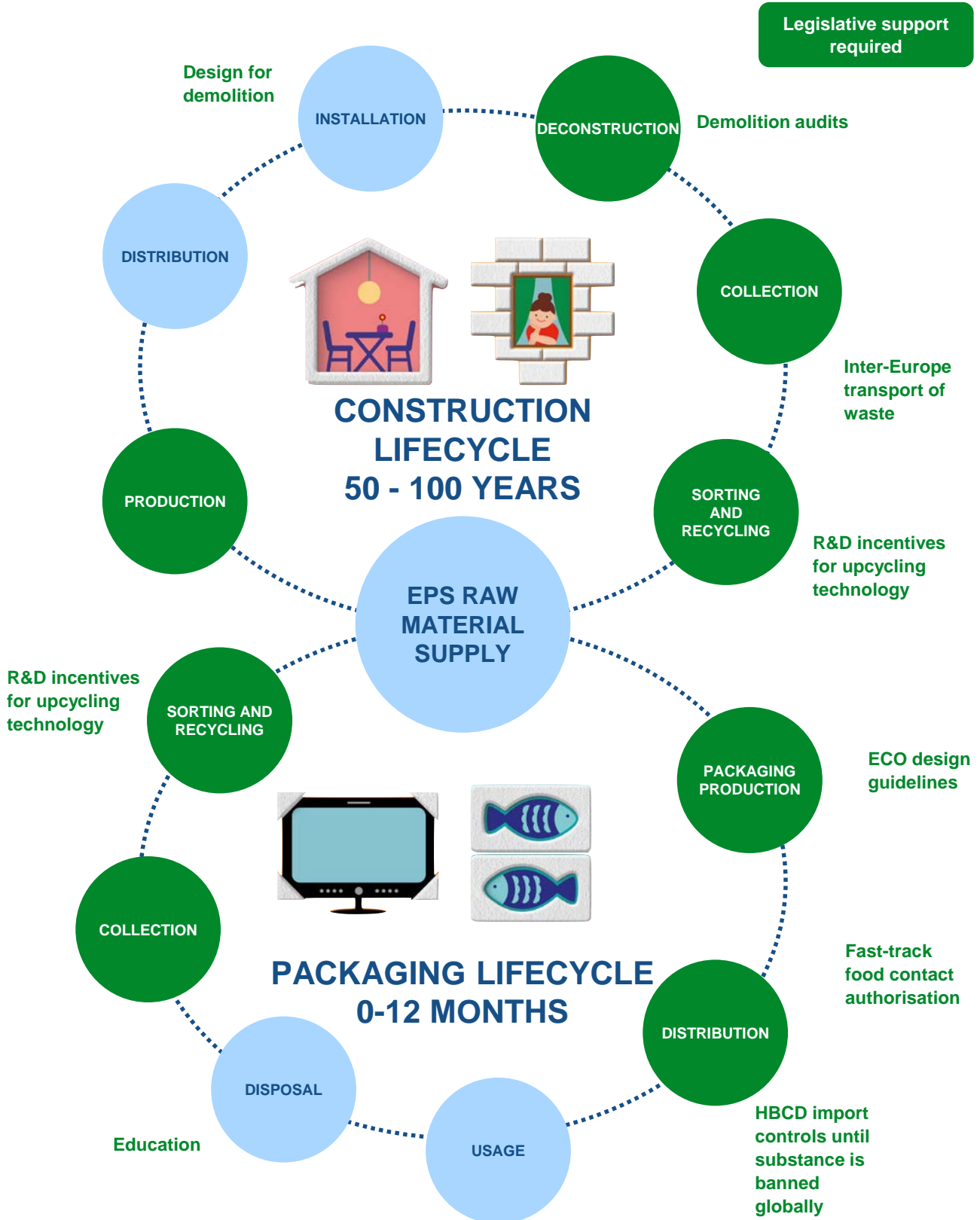
- Working with Members States to transpose legislation into local solutions
- Sharing and implementation of best practices
- Stimulating and investing in new innovative solutions.

The following drivers and dependencies lead the way to success.

Application	Drivers	Dependencies
Packaging a) Insulated b) Protective 	a) Large portion of this application is business to business (e.g. fish boxes) and allows easier collection of viable amounts of waste. b) Large portion of this application is business to business (e.g. appliances) and allows easier collection of viable amounts of waste.  Mechanical recycling is proven technology.	a) Successful demonstration of the EU LIFE funded <a href="#">EPS Sure</a> project for re-use as a food grade material Suitable logistics to allow for collection and transport of a concentrated waste stream. Development of <a href="#">PolyStyreneLoop</a> or alternative technologies (e.g. depolymerisation) for contaminated waste streams. b.) Establishing economical local logistics from and to central collection points / hubs.
Domestic Waste 	A large general source of EPS waste	<ul style="list-style-type: none"> <li>• Development of PolyStyreneLoop, or alternative technologies (e.g. depolymerisation) for contaminated waste streams.</li> <li>• Investment in sorting technologies to allow for separation of a concentrated EPS waste.</li> <li>• Co-operation between industry and Municipalities to find best solutions for financing collection and sorting, with the potential for a third party to run logistics and economics (e.g. Green Dot).</li> <li>• Requirement for municipalities to include EPS waste in their collection schemes.</li> </ul>
Construction a) New Build and Renovation b) Demolition Waste 	a) Reliable source of clean EPS acceptable for mechanical recycling into new products b) Large source of EPS insulation in buildings which has increased in recent years due to energy efficiency requirements. Currently, limited amounts of EPS insulation waste is available from demolished buildings. This will grow over the next decades as buildings containing insulation come to the end of their lives.	a) Establishing economical local logistics. b) Successful demonstration and scale up of EU LIFE funded PolyStyreneLoop technology and economics to allow investment in future plants to meet growing demand. Development of technologies to allow successful extraction of an EPS waste stream suitable for PolyStyreneLoop recycling. Logistics to allow supply of EPS demolition waste to European PolyStyreneLoop hubs.  Same factors would apply to any alternative technologies to PolyStyreneLoop that will be developed
Civil Engineering 	Low contamination, EPS blocks or off-cuts which are available for re-use and/or mechanical recycling.	Establishing economical local logistics from and to central collection points / hubs.

## 4. The way forward

The success of a circular supply chain depends on support from EU and national legislators at key points in the process as shown in the schematic flowchart below. With commitment from both sides, circularity can become a reality.



Potential exists for recycled polystyrene to cross styrene industries (e.g. EPS to XPS for construction insulation, EPS to PS for packaging) hence overlapping circularity loops with other industries.

## Annex

National Associations and Associated Members have signed the pledge, represented by the following:

Country	Associations
Austria	GPH
Belgium	Styfabel
Czech Republic	EPS CR
Denmark*	Plastindustrien
Finland	RTT/Finnish EPS Association
France	AFIPEB
Germany	IVH
Germany	IK
Greece	HAEPS
Hungary	MEPS
Ireland	NIAI
Italy	AIPE
Lithuania	Lithuanian Association
Netherlands	Stybenex
Norway	EPS-Foreningen
Poland	PSPS
Portugal	ACEPE
Romania	ROMEPS
Slovakia	EPS SR
Spain	ANAPE
Sweden	Plast-och Kemibranscher
UK	BPF
Turkey	EPS DER

\* The Danish EPS Association fully supports the EUMEPS' Pledge but their volumes are included in the separately submitted Pledge from the Confederation of Danish Industry (DI).