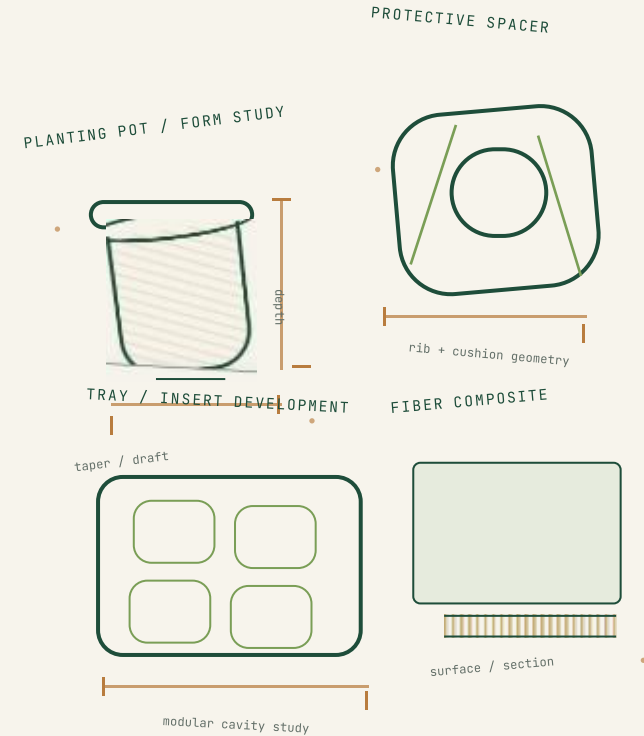


THE FUTURE OF BIOMATERIALS IN PACKAGING

Implementing certified soil biodegradable materials in packaging applications – it can be done!



THE QUESTION WE SHOULD BE ASKING

What if packaging could perform like plastic — but disappear like nature?

Moving beyond 'less plastic' toward materials designed for their real end of life.

01

Protect product

02

Enable transport

03

Prevent damage

Recyclability, recycled content, lightweighting and bio-based feedstocks all matter. But not every packaging component belongs in a recycling stream.

Sometimes the right solution is a material that can safely return to the biological environment.

PACKAGING IS ENTERING A NEW REGULATORY ERA

PPWR changes the design equation

ENTERED INTO FORCE

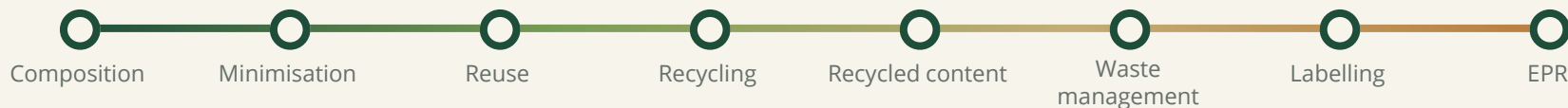
11 February 2025

GENERALLY APPLIES FROM

12 August 2026

EU OBJECTIVE FOR 2030

**Packaging placed on the EU market
recyclable in an economically viable
way**



The right material depends on the application — and its real end of life.

RECYCLABILITY IS NOT THE SAME AS CIRCULARITY

One material solution cannot solve every packaging problem

Recycling works best when...

Sufficient volume

Clean collection

Compatible materials

Economic value

Efficient sorting

Established stream

≠

Small components can be...

Too small to sort

Attached or mixed

Contaminated

Single-use

Geographically dispersed

Technically recyclable does not necessarily mean actually recovered.

Biodegradable materials are not a universal replacement. They are an additional pathway where recovery is difficult, unnecessary or inappropriate.

BIODEGRADABILITY WITH A DEFINED END OF LIFE

'Biodegradable' must mean something measurable

Material performance

Functions in the intended application.

Process compatibility

Works with conventional manufacturing, including injection moulding.

Defined end of life

Application-specific and evidence-led.

TÜV AUSTRIA — OK biodegradable SOIL

For soil applications.

Don't just make a material 'green'. Engineer a material which end of life is appropriate to the application.

Soil biodegradability

Industrial composting

Home composting

Marine biodegradability

Separate claims require separate evidence; soil certification does not imply equivalence across environments or every product.

THREE QUESTIONS FOR THE FUTURE OF PACKAGING

1

Does it function?

Mechanical loads · humidity · temperature ·
handling · storage · transport · service life

2

Does it minimise material?

Reduce material without sacrificing function.

3

What happens after use?

Select an end-of-life pathway appropriate to
the actual use case.

This is where biodegradability can create a different value proposition.



A PLANTING POT THAT DOESN'T BECOME WASTE

Showcase 1 · Bioplasmar Plant Pots

The pot protects the plant through cultivation, handling, transportation and retail. Once planted, its job is finished. The Bioplasmar pot is designed to provide the required function through cultivation and retail — then **biodegrade in soil after planting**. “Plant with Pot”

Commercialised with many growers

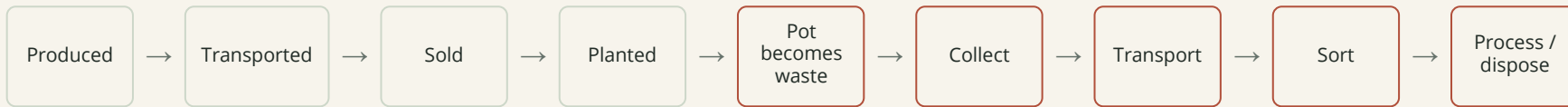
Sold through retailers including Aldi and REWE

TÜV AUSTRIA certified for biodegradability in soil

THE VALUE IS NOT ONLY ENVIRONMENTAL

Eliminate the disposal step

CONVENTIONAL FLOW



REMOVE THE WASTE CHAIN

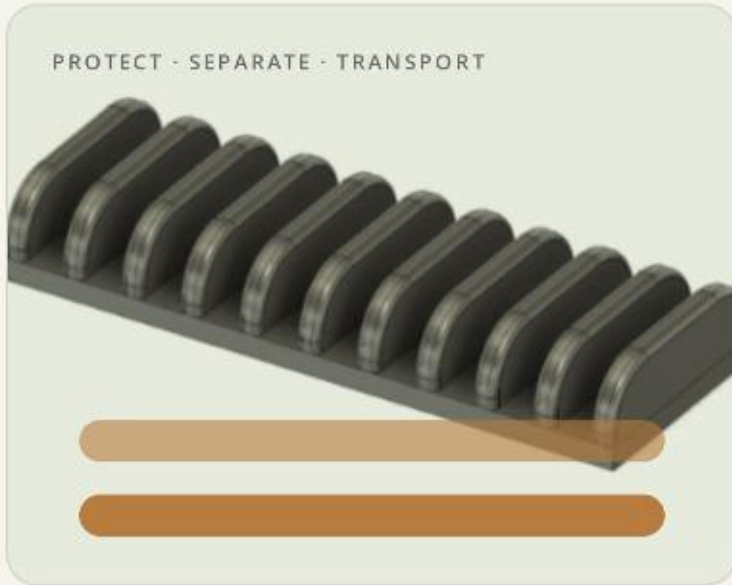
DIRECT PLANTING FLOW



The best waste stream is sometimes the one you don't have to create.

THE SMALL COMPONENT THAT CAN CREATE A BIG WASTE PROBLEM

Showcase 2 · Biodegradable spacers for gasket packaging



A small spacer protects gaskets and maintains separation through packaging, storage and transport. Its job ends with logistics.

Instead of only asking “Can we make the spacer recyclable?”, ask “Can we make the spacer disappear responsibly after it has done its job?”

Compete on total system value — not simply on the material price

NEW POSSIBILITIES

Scope of application



Sometimes the challenge is not the application but the manufacturing technology.

Developing functional bio composites for all manufacturing processes is a challenge we welcome

Extrusion grade biocomposites for sheet production.
Windable and **thermoformable!**

Widening the scope of applicability!

DESIGNING FOR THE JOB — AND DESIGNING FOR THE END

Match material to function.

Minimise material where possible.

Design for the real end-of-life pathway.

The future of packaging is not one material replacing another. It is choosing the right material for the job — and for what happens next.