

upPE-T project

Upcycling of PET packaging waste to produce biodegradable plastic



4th Future of Plastics Conference 2023

Tuesday 7th February 2023

upPE-T



H2020-NMBP-TR-IND-2020-twostage
RIA
GRANT AGREEMENT: 953214

upPE-T – EU H2020 Project

- Vision of the project : upcycling of PE & PET wastes to generate biodegradable bioplastics for food and drink packaging.

Project Information

upPE-T

Grant agreement ID: 953214

Status

Ongoing project

Start date

1 November 2020

End date

31 October 2024

Funded under

H2020-EU.2.1.4.

Overall budget

€ 7 826 685

EU contribution

€ 7 826 685



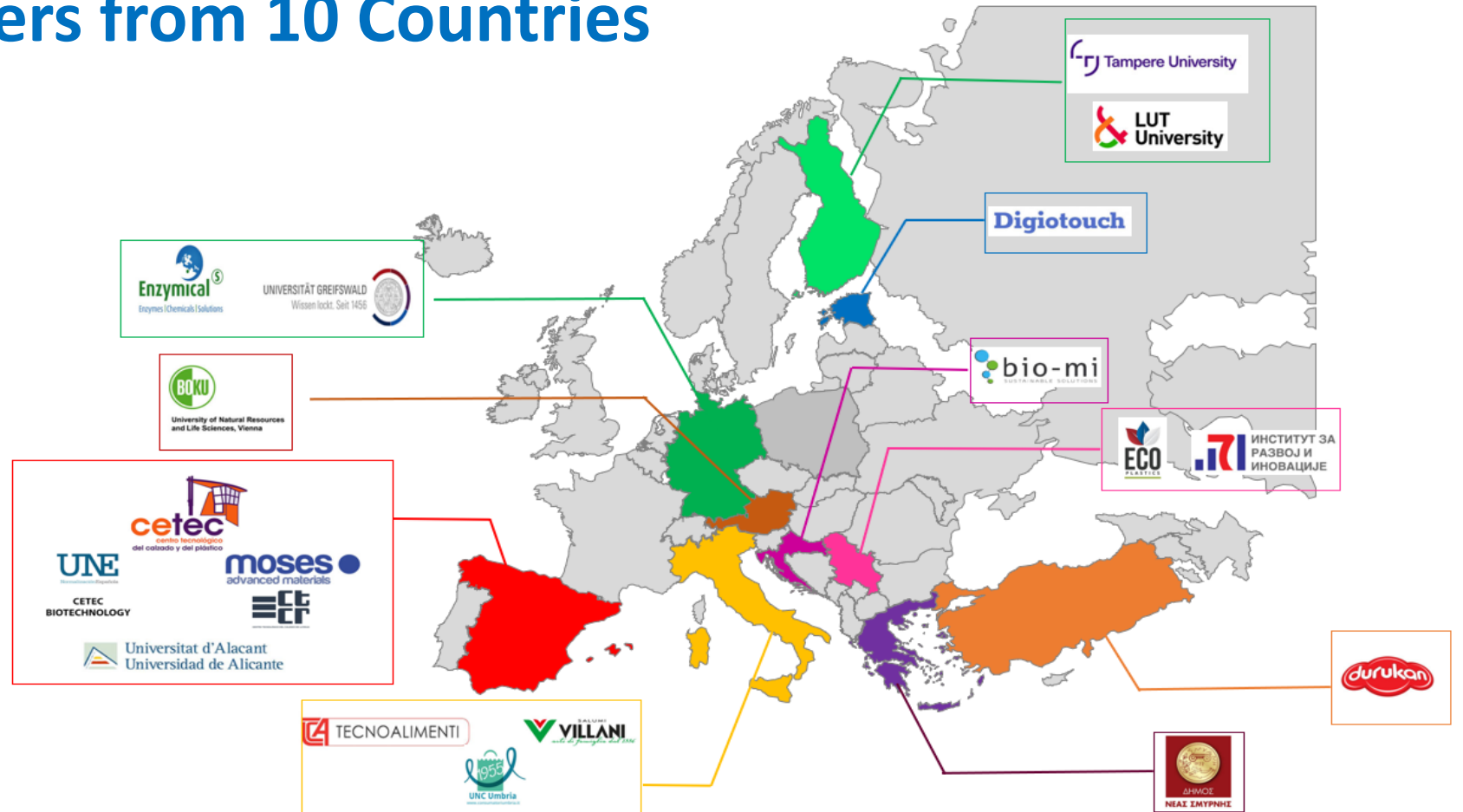
Coordinated by

ASOCIACION EMPRESARIAL DE INVESTIGACION
CENTRO TECNOLOGICO DEL CALZADOY DEL
PLASTICO DE LA REGION DE MURCIA

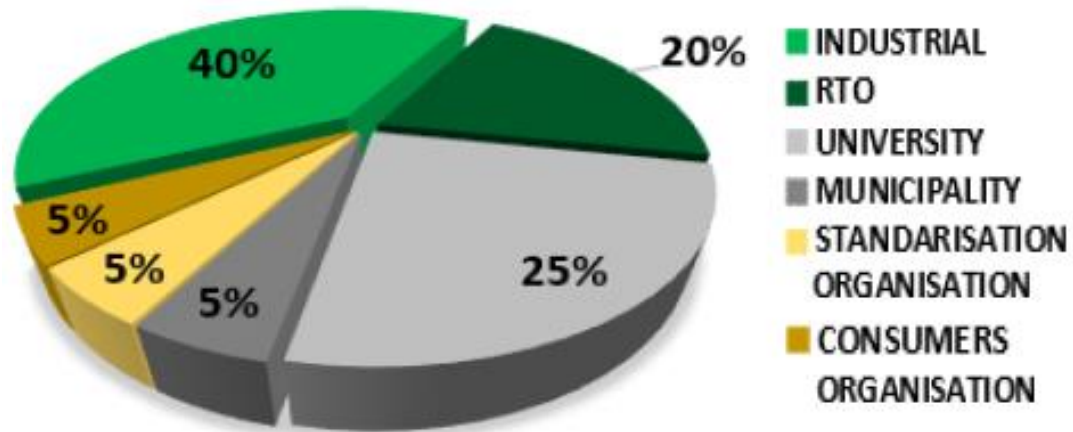
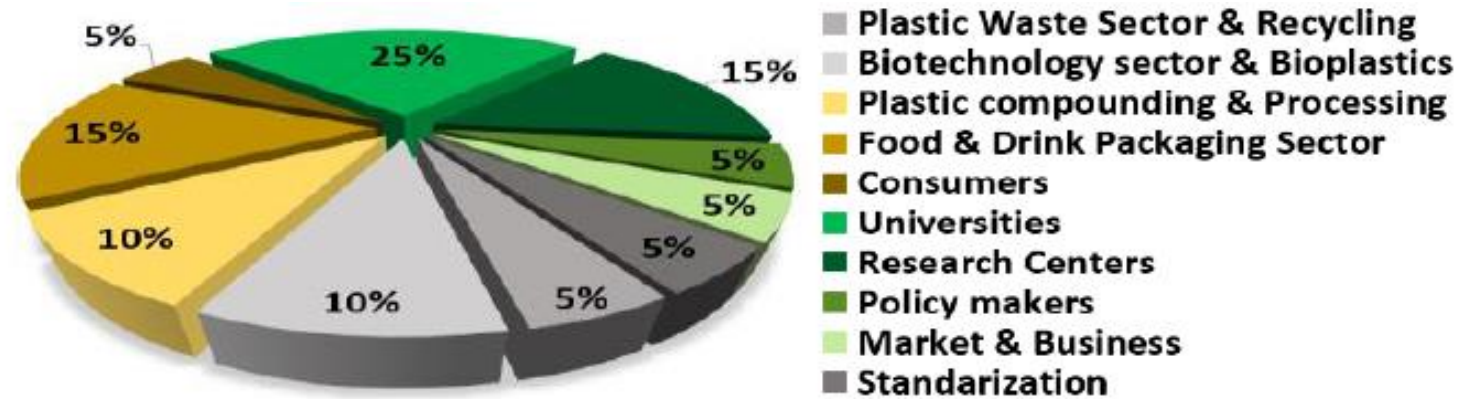
 Spain

upPE-T Partners

20 Partners from 10 Countries

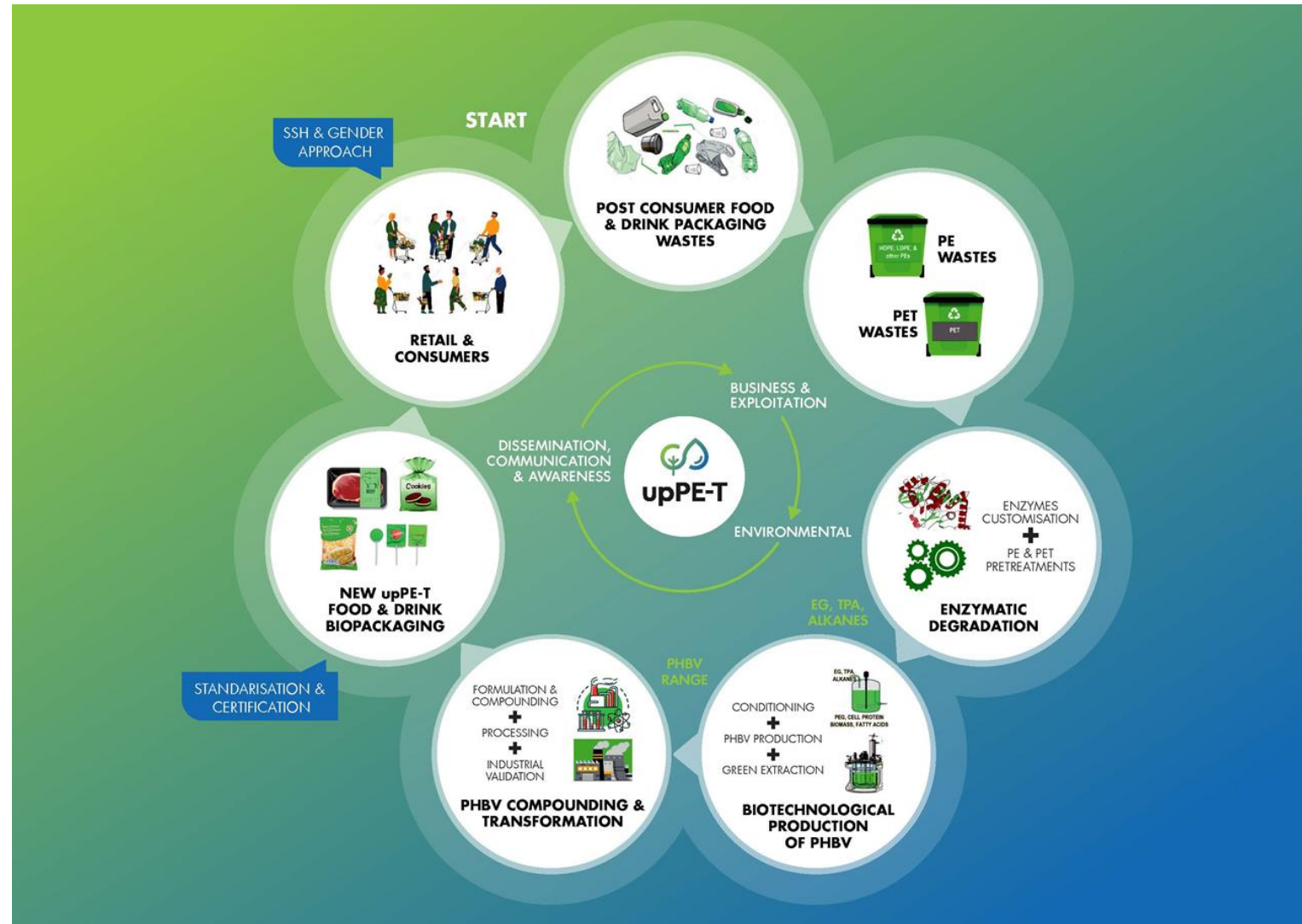


Whole value chain represented: Interdisciplinary nature of upPE-T membership



Multi-sectorial approach

upPE-T Circular Ecosystem



Enzymatic degradation of PET waste

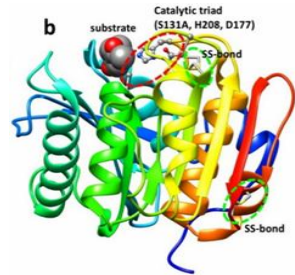
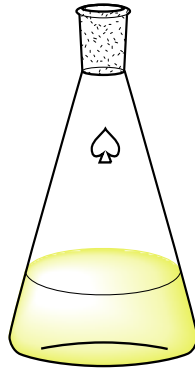


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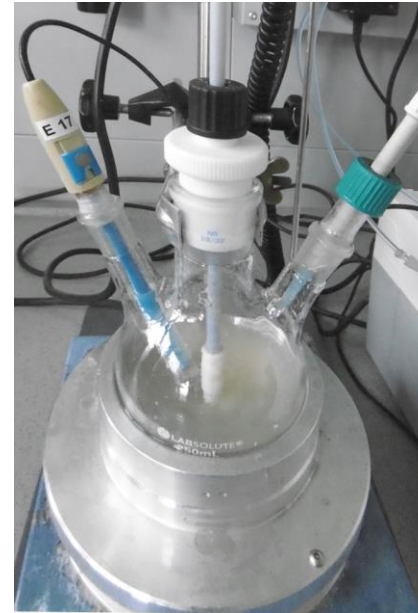
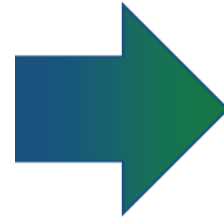
Pretreatment
Improved affinity to enzymes
+
Enzymatic degradation
Customized biocatalysis

TPA & EG

Enzymatic degradation of PET waste



PETase
production

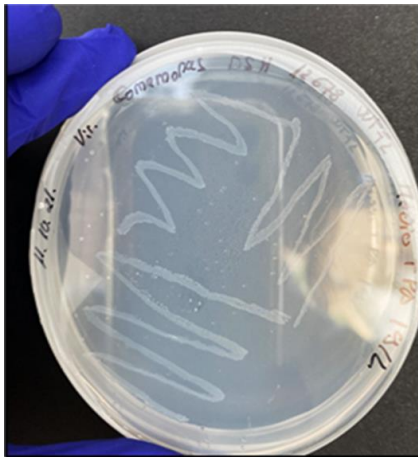
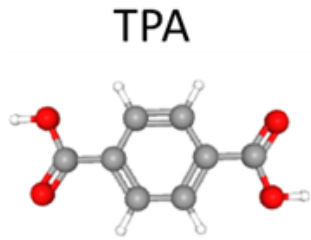


pH-Stat testing of
different treated PETs

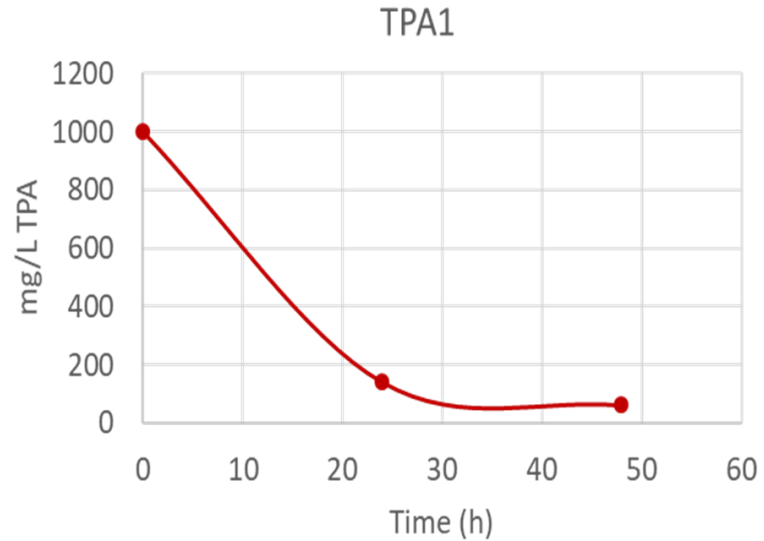


Scaling up- Degradation
of 150 g PET

Upcycling TPA to biodegradable plastic

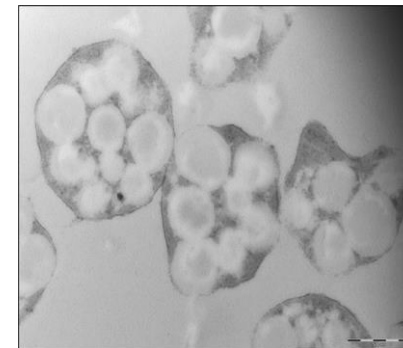


Bacteria growing on TPA
as sole carbon source

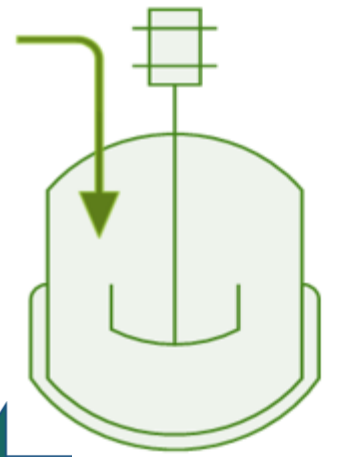


TPA consumption during
bacterial growth

Intracellular PHA granules



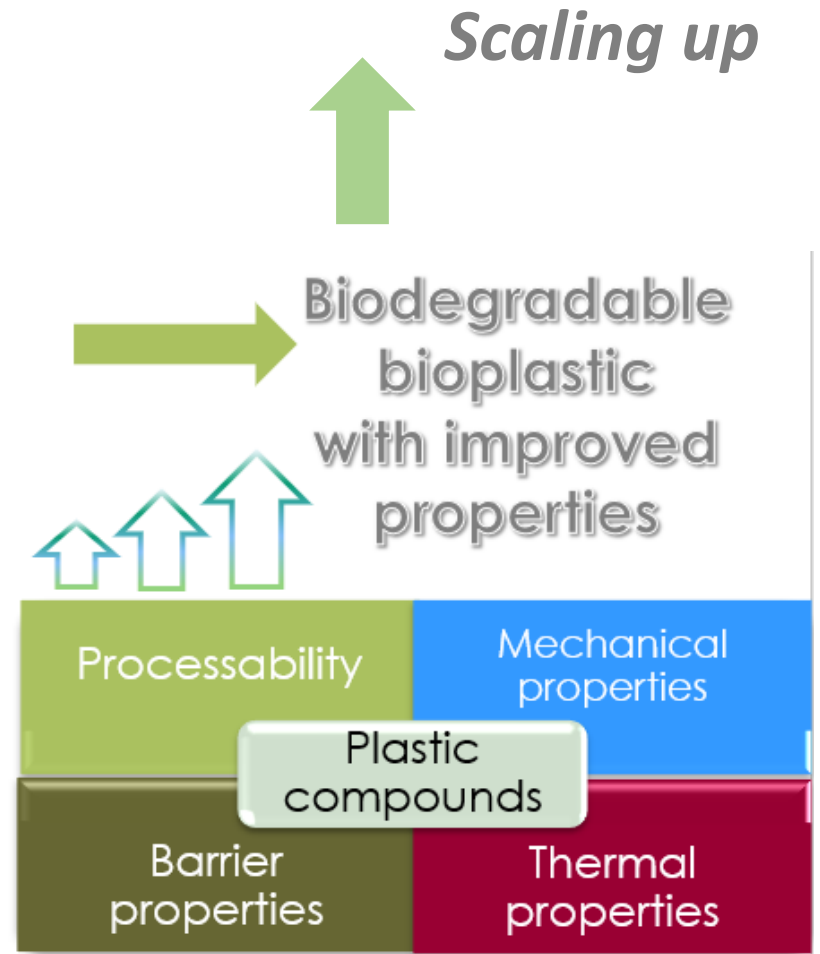
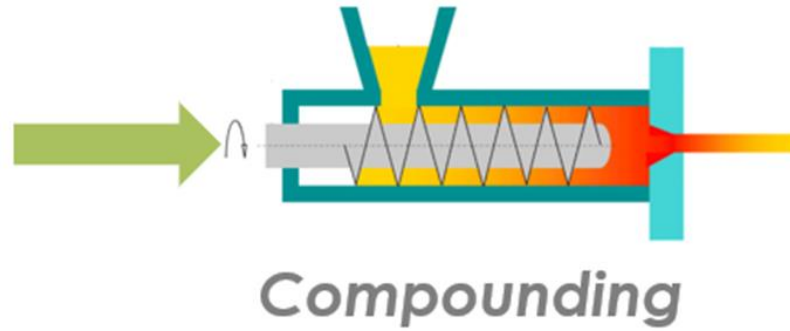
Biomass
source of nutrients



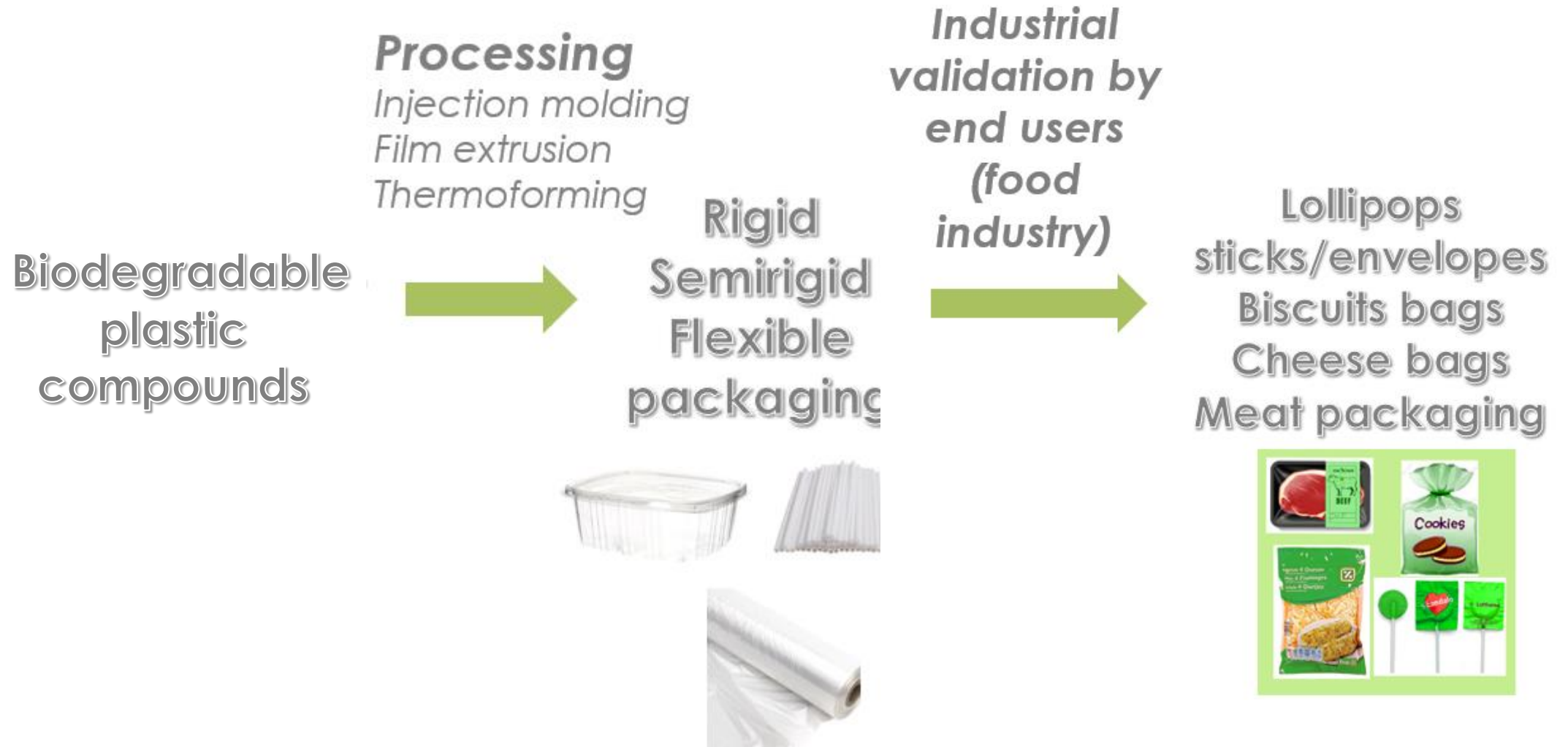
Compounding PHBV to material for packaging



PHBV
+
Other
component



Transformation into packaging and industrial validation



THANK YOU

<https://uppet.eu/>



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