



cimpa

a circular
multilayer plastic approach
for value retention of end-of-life
multilayer films



A circular multilayer plastic approach for value retention of end-life multilayer films



CIMPA project, Grant Agreement N° 101003864



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Our goal is to turn multilayers films waste into valuable and circular resources through cutting-edge technology and contribute to Europe's Green Deal agenda

CIMPA AT A GLANCE

Grant agreement ID: 101003864

Start date: 1 June 2021

End date: 31 May 2024

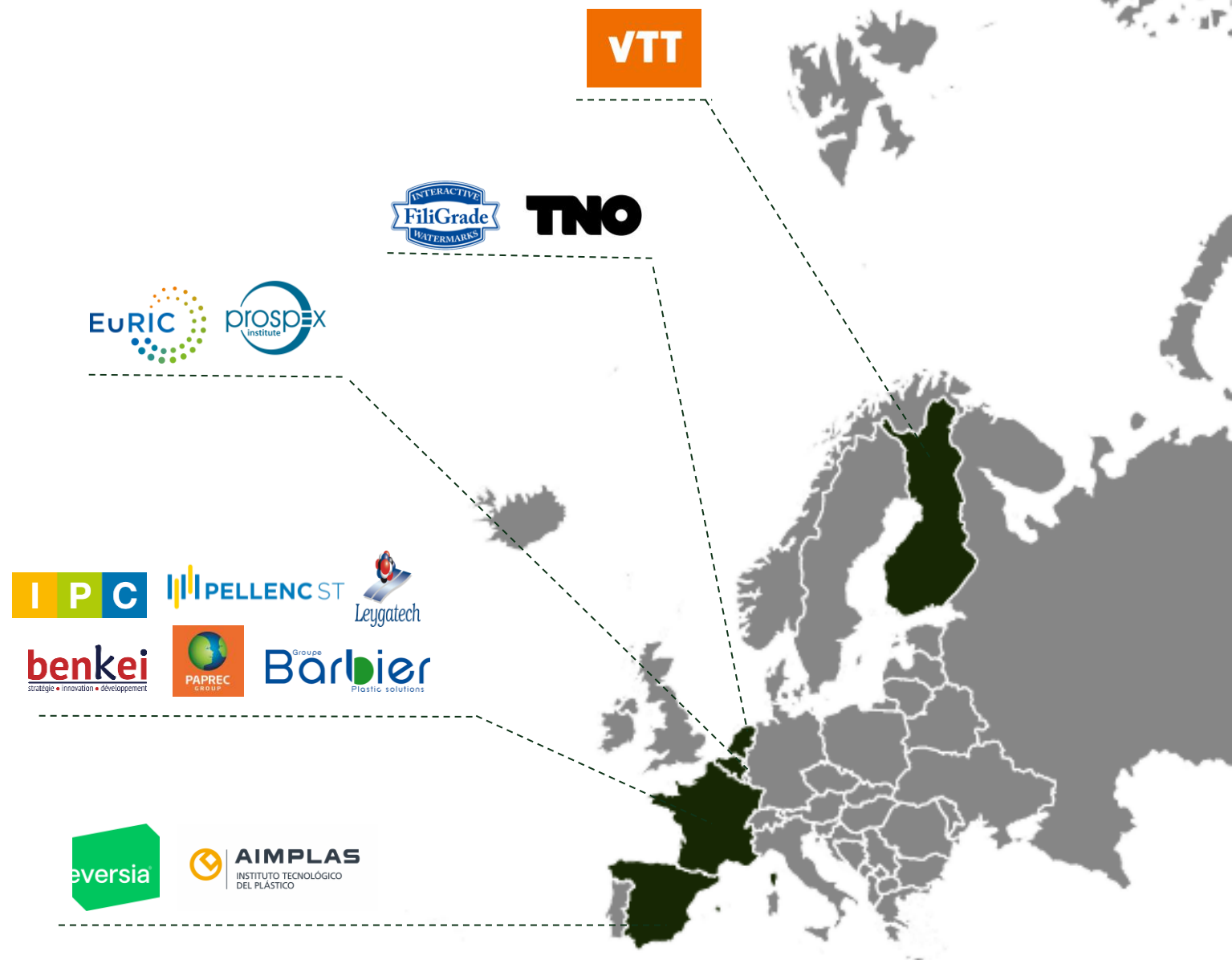
Funded under: H2020-EU.3.5.4.

Overall budget: € 4 984 396,25

EU contribution: € 4 984 396,25

Coordinated by:

CENTRE TECHNIQUE
INDUSTRIEL DE LA PLASTURGIE
ET DES COMPOSITES, France



EU PLASTICS STRATEGY

Directive 2018/852 on **packaging and packaging waste**

Tougher requirements: recyclability and recycled content

31/12/2025: recycling of plastics in packaging waste $\geq 50\%$ of plastic

31/12/2030: recycling of plastics in packaging waste $\geq 55\%$ of plastic

European Strategy for Plastics in a Circular Economy:

all plastic packaging on the EU market will be recyclable by 2030

Join forces with the **Circular Plastic Alliance**, a collaboration platform that endorses the ambitious target that by 2025 at least 10 million tonnes of recycled plastics should find their way into products in Europe each year.



EXAMPLE OF FOOD PACKAGING

✓ Recyclable

✗ Non Recyclable

PET bottles
PET punnets



3.6 Mt



PS, XPS pots
and tubs



1.2 Mt



HDPE, PP bottles
PE, PP punnets &
pots



2.5 Mt



**Complex packaging
(mainly multilayers)**



2.1 Mt
20 %t



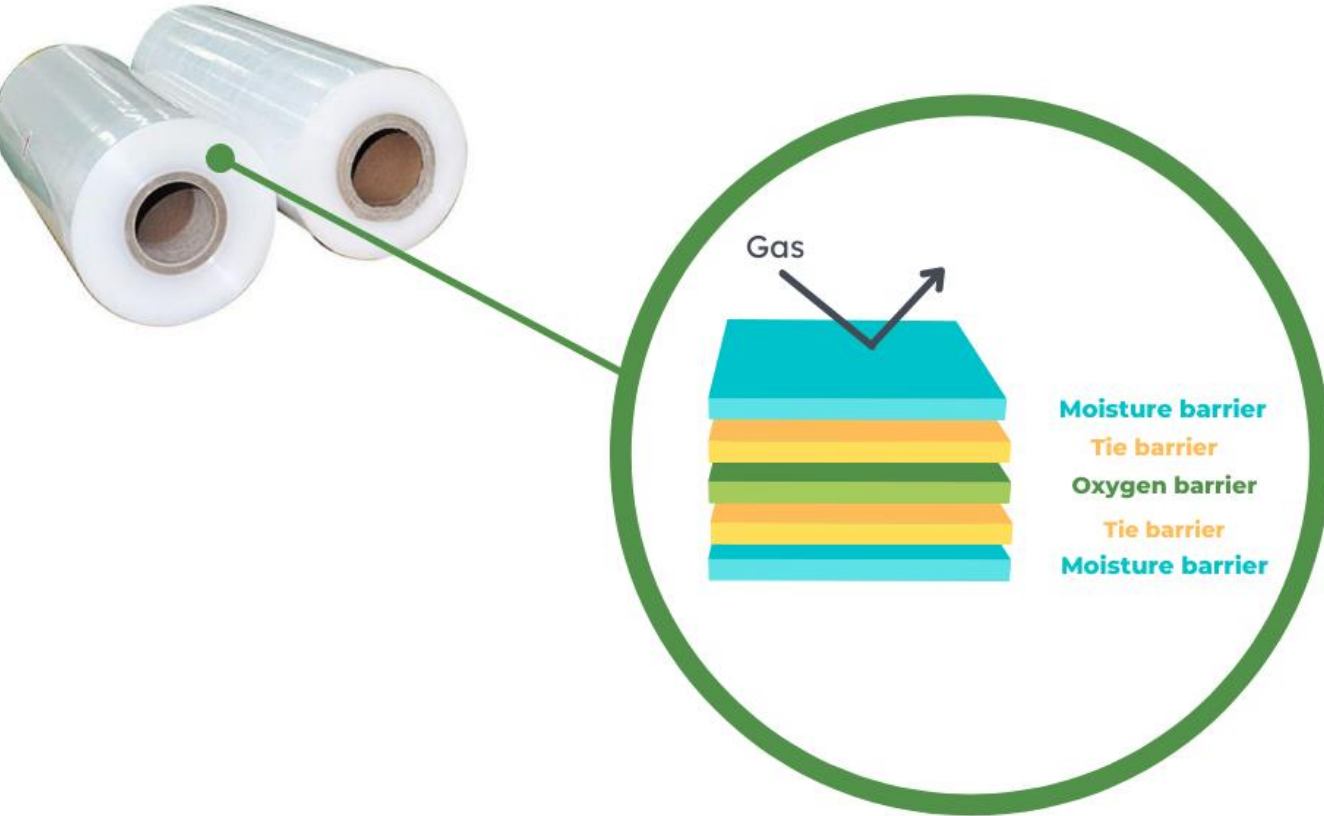
PVC packaging



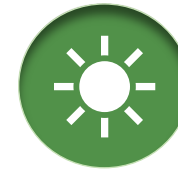
0.3 Mt



Multilayer films characteristics



Exceptional mechanical resistance



Impermeable to oxygen and UV protection



Moisture protection and water conservation



It is lightweight, makes transportation easy → reduces shipping costs and emissions



Ensures food safety and crop protections → reduce food waste

Multilayer films applications

Multilayer plastic films are used as packaging for the protection of food (2Mt/year) and agriculture for crops (0.6Mt/year)

Food

PA/PE
Vaccum packaging



PET/PE
Cheese, cooked food



BOPPmet/BOPP
Snacks, candies



PET/Alu/PE
Crips, pet food



PE/EVOH/PE
Stand up pouches



PE/EVOH/PA/PE
Fresh meat, cooked meat



PP/PA/EVOH/PA/PE
Snacks, baby, frozen food



PET/PVDC/PA/PP
Coffee



Agri.

PE/PA/PE *Barrier fumigation film*



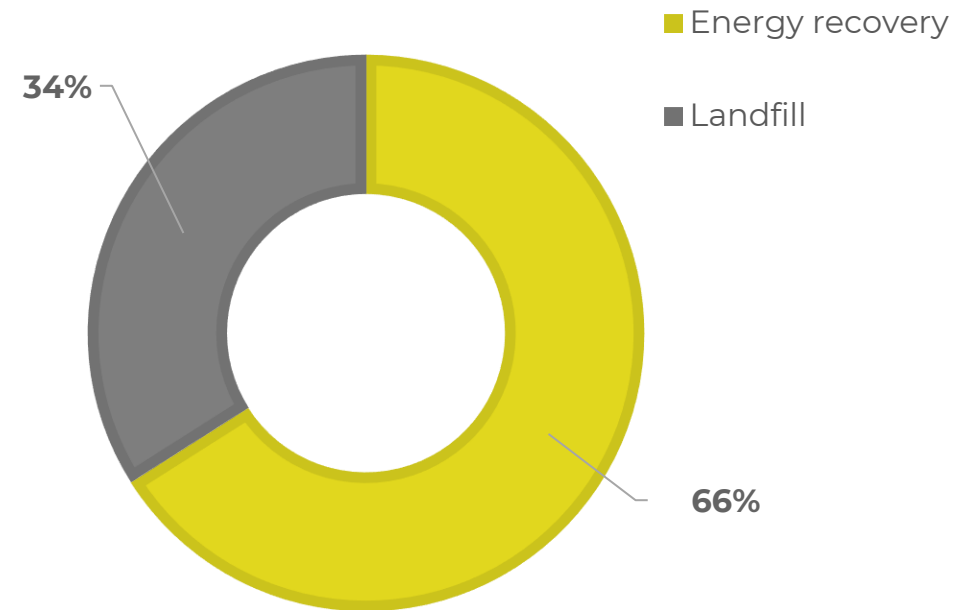
PE/EVOH/PE *Barrier fumigation film, cover silage film*



An environmental and economic issue

In the last decades, development has focused on the improvement of multi-layer materials properties (barrier, mechanical resistance etc) rather than their recyclability

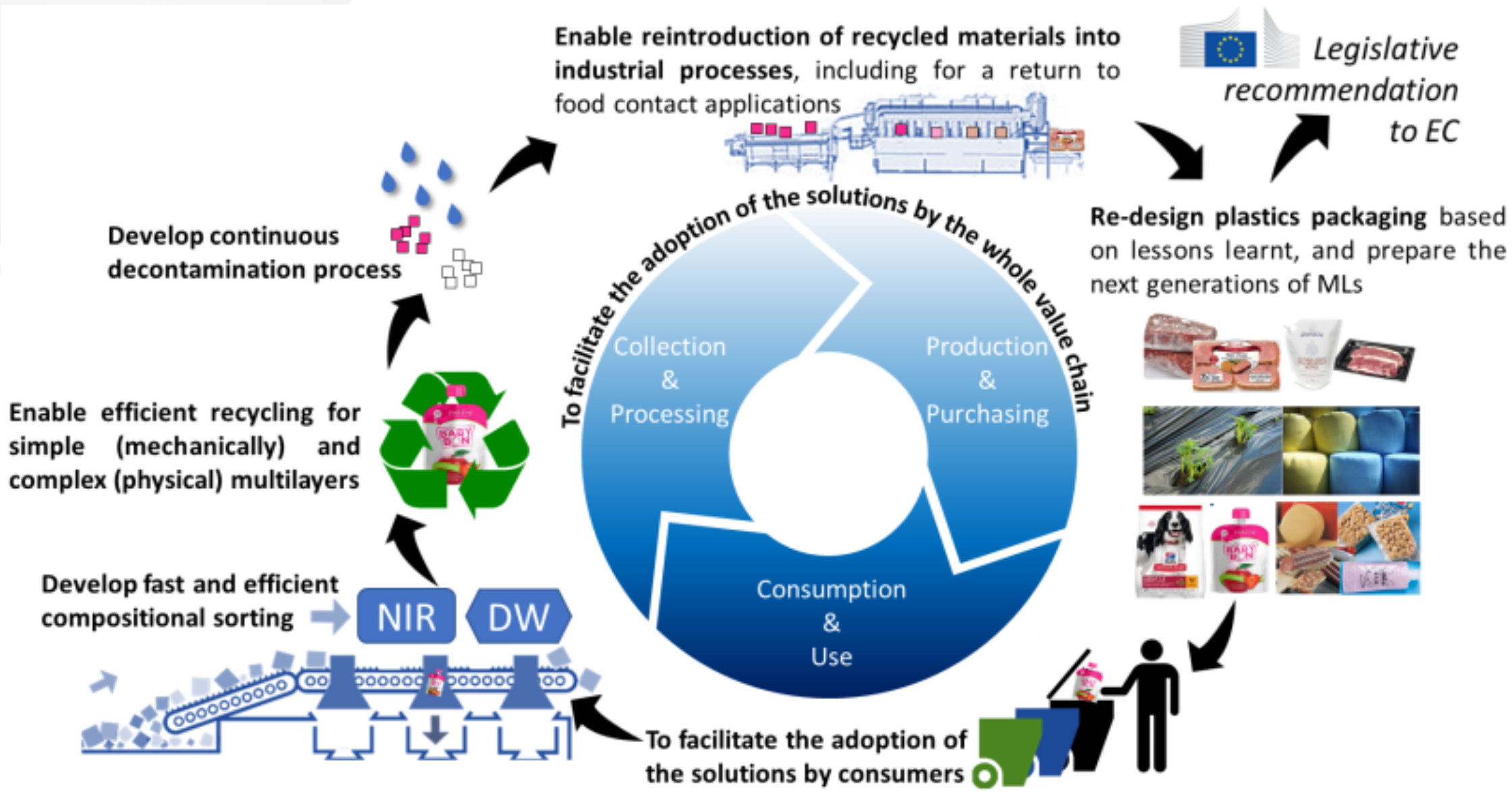
- ❖ Due to current lack of sorting and recycling technologies, multilayer films are mostly incinerated or worse landfilled
- ❖ As a consequence, each year, the equivalent of 650M€ to 950M€ economic value is not recovered for the EU economy.



CIMPA CONCEPT

CIMPA will develop the **first recycling value chain** for multilayer films retaining up based on a synergetic approach combining innovative **compositional sorting, mechanical and physical** (dissolution) **recycling**, and **upgrading solutions** (decontamination, properties improvement, in-line adaptive process control).

The project aims to demonstrate that multilayer films can be circular in two large volume segments: **food and agriculture.**



CIMPA IMPACT

- ❑ Moving from ~ 2% of ML recycling to a projected **recycling rate** between **12%** (short-term worst-case scenario) **up to 72%** (in a high impact scenario including return to food contact)
- ❑ **Reduction of virgin material use** by to 1.17M ton / year
- ❑ **Reduction of waste incinerated or landfilled** by up to 2.34M ton / year
- ❑ **Reductions of CO₂ emissions** by 2 to 4Mt/y
- ❑ **Average value retentions in EU** (= economic value saved in a circular vision) between 0.3B€ / y up to 2.2B€ / y



**Do you have any questions?
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 101003864.