

WE ARE THERE

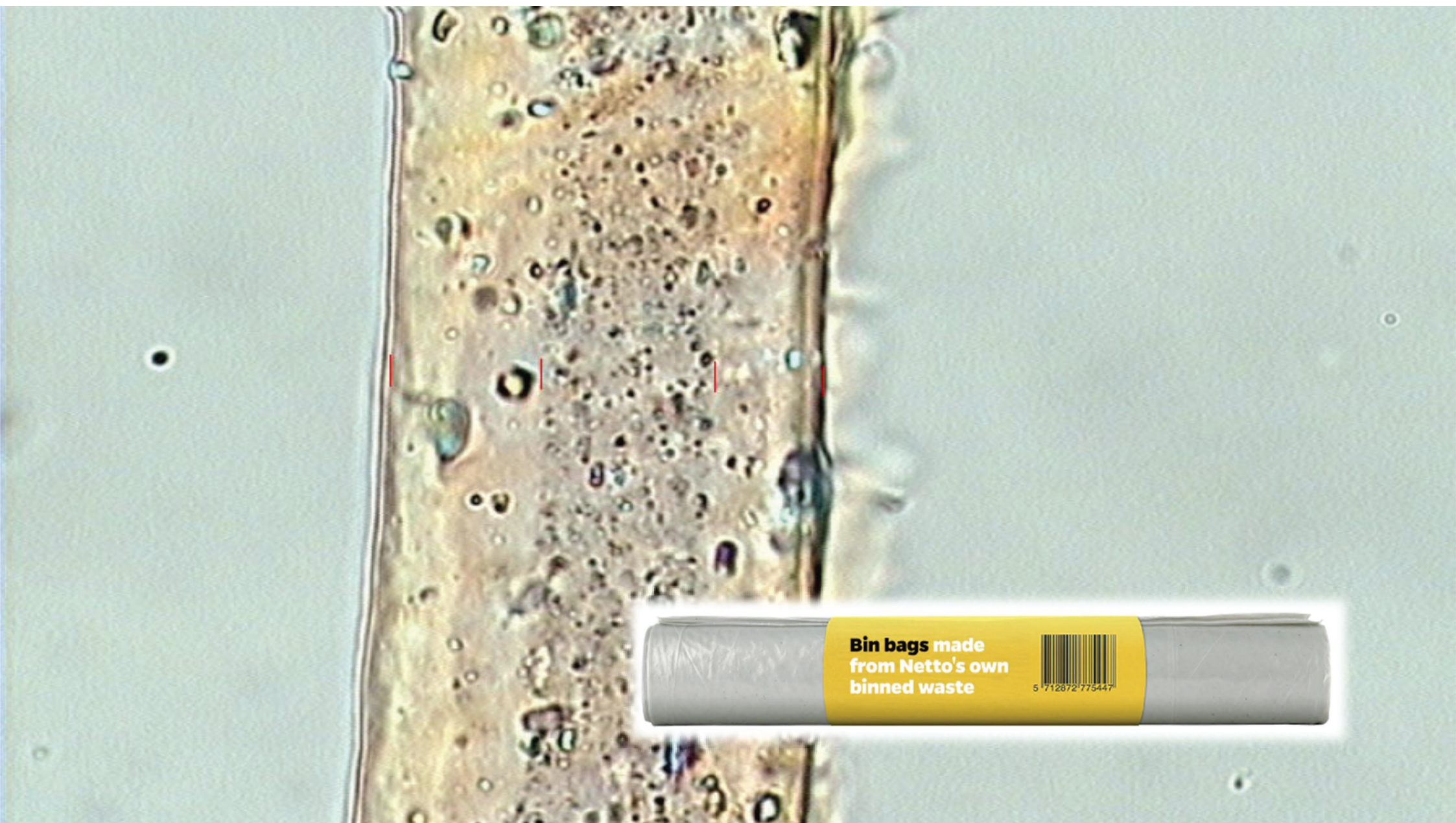
Circularity in high performance polyethylene film converting

International Recycling Forum, Wiesbaden, November 2019



RELIABLE · LONG-TERM · ACTIVE



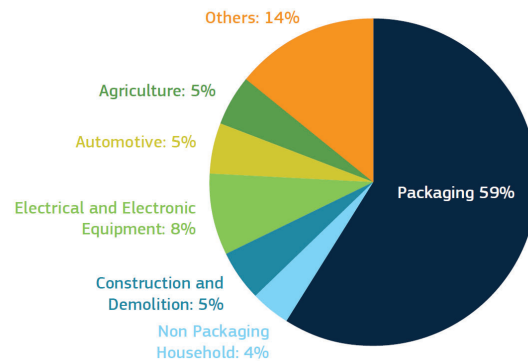


WHATEVER WE DO – TIME IS OF ESSENCE



A EUROPEAN STRATEGY FOR PLASTICS IN A CIRCULAR ECONOMY

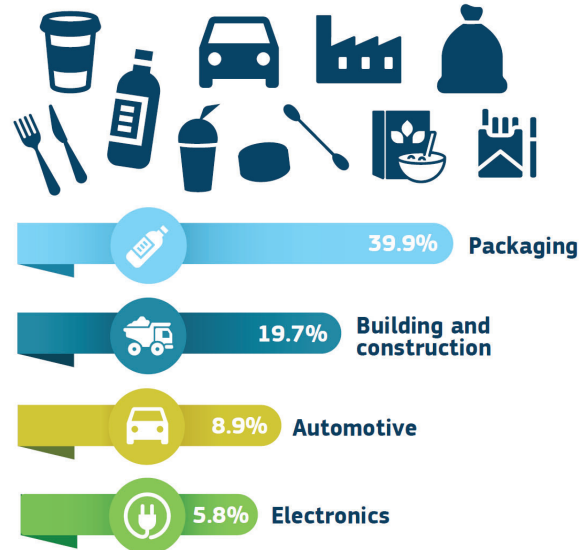
EU PLASTIC WASTE GENERATION IN 2015



~26 Mton plastic waste is generated every year

EUROPEAN PLASTICS DEMAND IN 2015

49 million tonnes



By 2025

Degree of recycling of plastics in Europe shall increase from 30% to 50%.

By 2030

All plastics packaging placed on the EU market shall be reusable or easily recycled.





FUTURE = RECYCLED, THINNER AND NON FOSSIL

Trioplast

Leading producer of polyethylene based thin films for various application

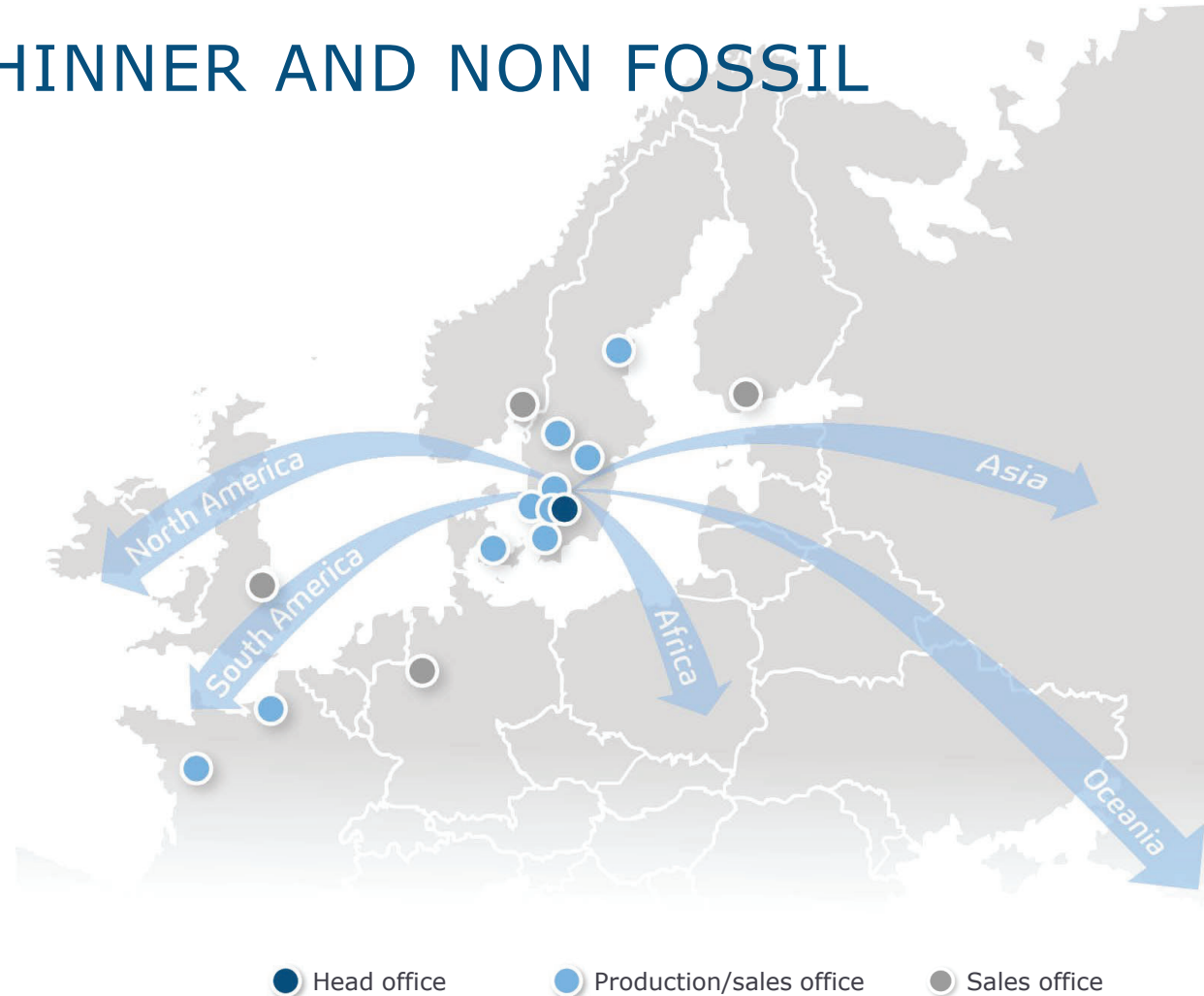
Net Sales

4,3 Billion SEK

9 production units

6 Sweden, 1 Denmark and 2 in France

Of total processed volume plastics in Trioplast Group
25% based on recycled plastics

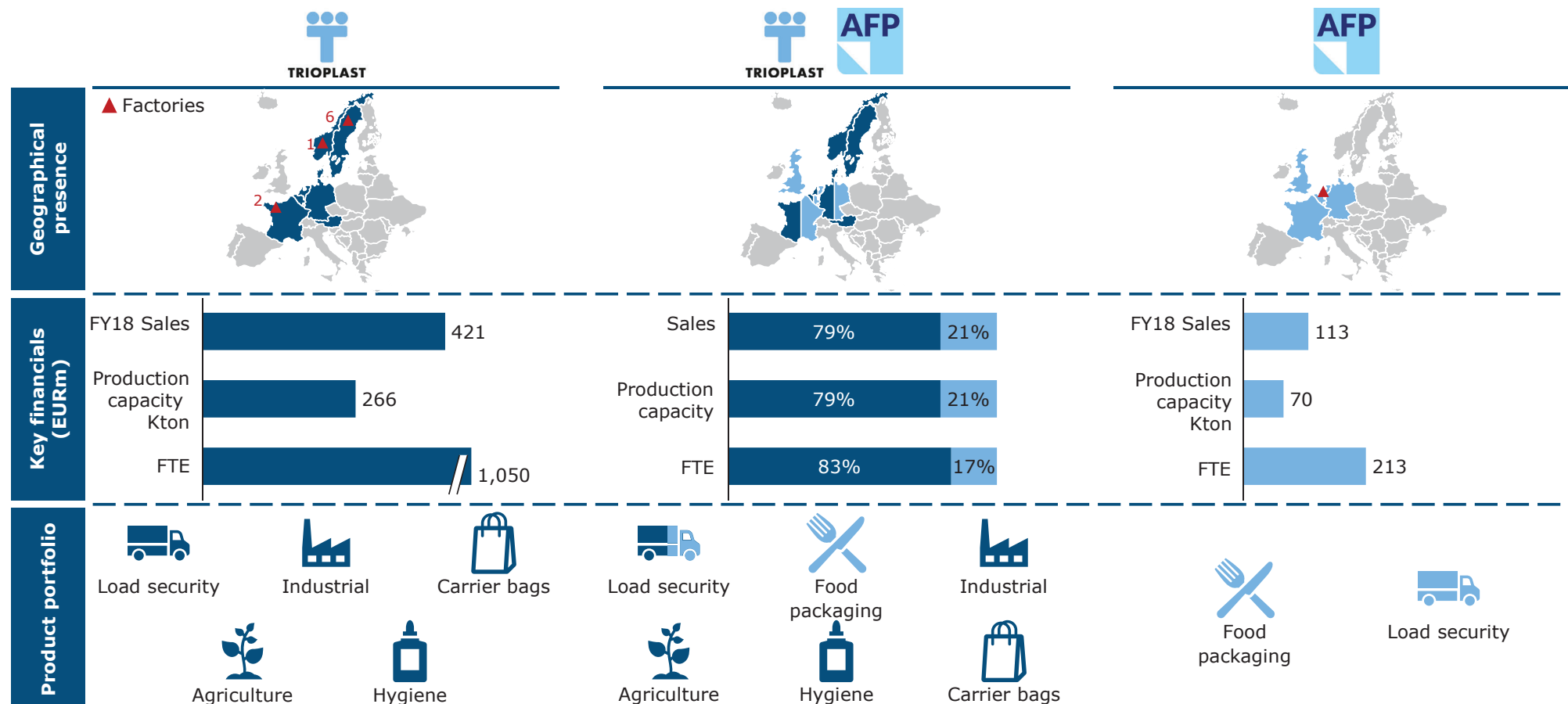


NEWS

***Trioplast acquires
Apeldoorn Flexible
Packaging, AFP***



CREATING A LOAD STABILITY POWERHOUSE AND A STRONG SUPPLIER IN FOOD PACKAGING



Source: Company materials



SUSTAINABLE PRODUCTS AND SERVICES



REMOVE

- Minimizing our carbon footprint by using renewable and recycled raw material.

REDUCE

- Downgauging (reducing the thickness of our films) with retained, or even enhanced, mechanical properties and quality. This means we can cut the amount of material needed in production and thereby reduce our environmental impact.

RECYCLE

- Focused innovation to continuously develop our ability to use recycled material in our products.
- Continuing to develop our in-house recycling technology based on our state-of-the-art equipment and experience in this area.

SUSTAINABLE SERVICES

- Working with customers to optimize their packaging solutions and transport with a focus on reducing environmental impact.
- Supported by SimaPro

A close-up photograph of a person's face, focusing on the eyes. The person has one blue eye and one green eye. The skin is fair with some freckles. The text is overlaid on the image.

Recycled Non fossil

Downgauged/Thinner

Not biodegradable



WORKING IN THE FULL VALUE CHAIN

- Trioplast engages actively in the creation of collection schemes where possible.
- Ongoing is implementation in Spain and UK
- Also – chair of ISO/ TC 061/ SC 14/ WG 5 Mechanical & chemical recycling



Sweden



New Zealand



Sweden



Norway



IFFPG

Ireland



Germany



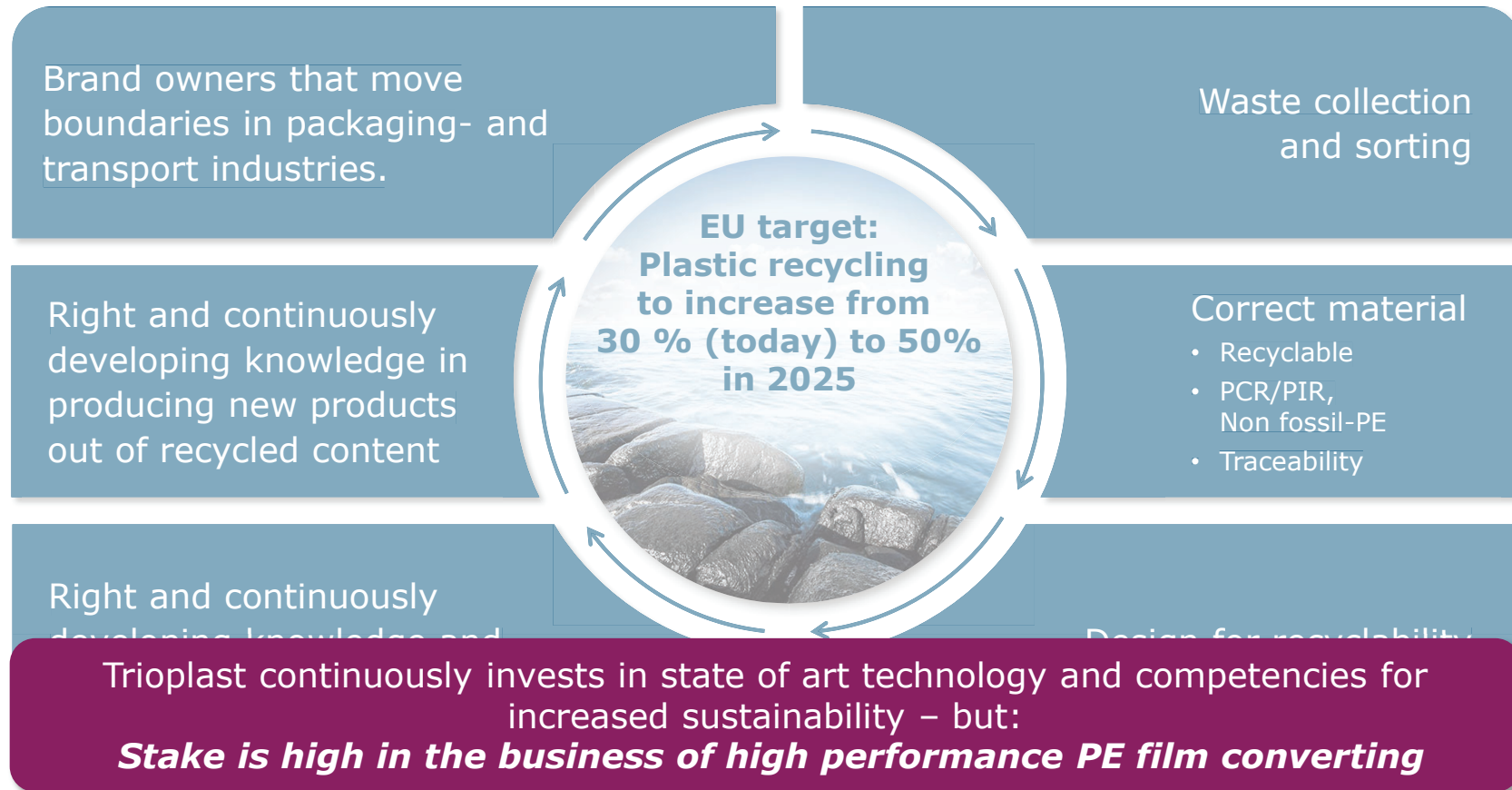
Agriculture Plastic Environment

France





CLOSING THE LOOP – NOW





WHEN OFFERING POST CONSUMER RECYCLED (PCR) POLY ETHYLENE - DISCUSSION IN TWO LEVELS WITH CUSTOMERS

LEVEL
1

**Understanding
customer needs and
managing expectations**

LEVEL
2

**The cost of sustainably
producing a High
Performance product
based on PCR**

LEVEL
1

UNDERSTANDING CUSTOMER AMBITIONS

...and moderating and managing expectations

Example: agreeing on a value for an improved foot print

- **The SCC, Social Cost of Carbon**, is a measure of the economic harm from CO₂ emissions impacts, expressed as the dollar value of the total damages from emitting one ton of carbon dioxide into the atmosphere. The origin of this measure is the US Government.
- The current central estimate of the social cost of carbon is over **\$50 per ton (5 cents per kilo)**.
- While this is the most robust and credible figure available, it does not yet include all of the widely recognized and accepted scientific and economic impacts of climate change. ***For that reason, many experts agree this is far lower than the true costs of carbon pollution.***

Triogreen Super Stretch 60 (BIO Based)

Product comparison	Climate Change, [kg CO ₂ Eq./kg Film]	
	Fossil Based Super Stretch 60	Triogreen Super Stretch 60
Material contribution	2.06	-0.32
Energy	0.04	0.04
Transport to Converter	0.17	0.17
Total	2.26	-0.11

SCC – Fossil based product:

$2,26 \times 0,05 = 0,113$ USD/kg film

SCC – Triogreen product:

Zero
(or actually “negative” cost)

Cost avoidance if using Triogreen Stretch Hood:

Mtrl cost approx. 1,4 USD/kg -> $0,113/1,4 = 8\%$

+ Green profiling

+ Customer acceptance

+ Meet regulatory demands/legislation

LEVEL
1

RECYCLED PLASTICS NOT ONLY RECYCLED PLASTICS



\$



\$ \$





**TRIO
LOOP**
RECYCLED POLYETHYLENE

NEW

**SILAGE STRETCH FILM –
MADE FROM RECYCLED POLYETHYLENE!**

For a more sustainable farming we can now present our concept for a future silage stretch film made from recycled material.

With >25% content of post consumer recycled material (PCR) the opportunities for an increased circularity open up and less impact on the environment will be possible!

>15% reduction of total carbon footprint compared to virgin based product*

*Calculation from SimaPro made by Trioplast 2019

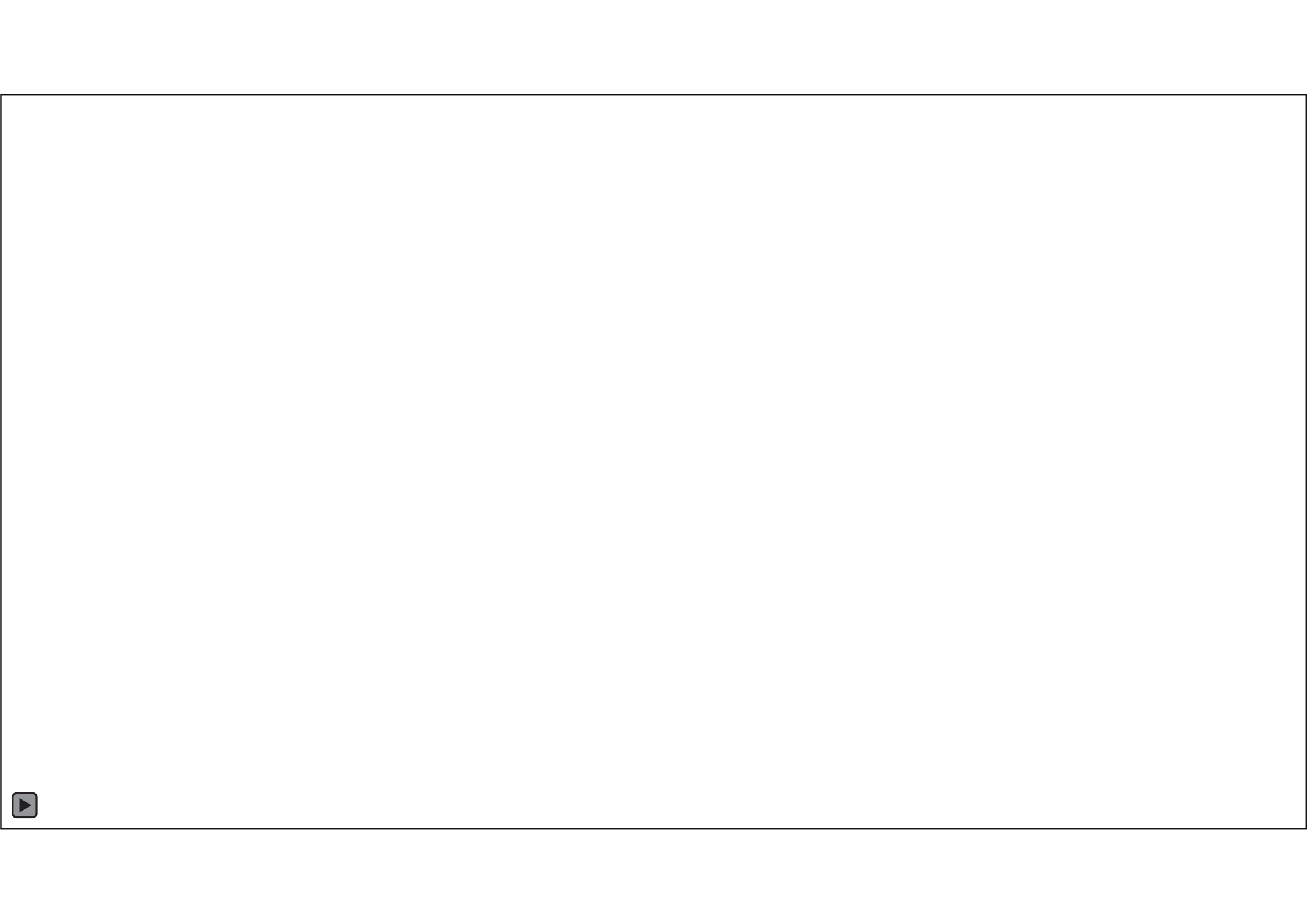
PATENT
PENDING

**WE ARE
RECYCLERS**



A CONVERTERS "CIRCULAR REALITY" – THE COST OF PRODUCING WITH PCR









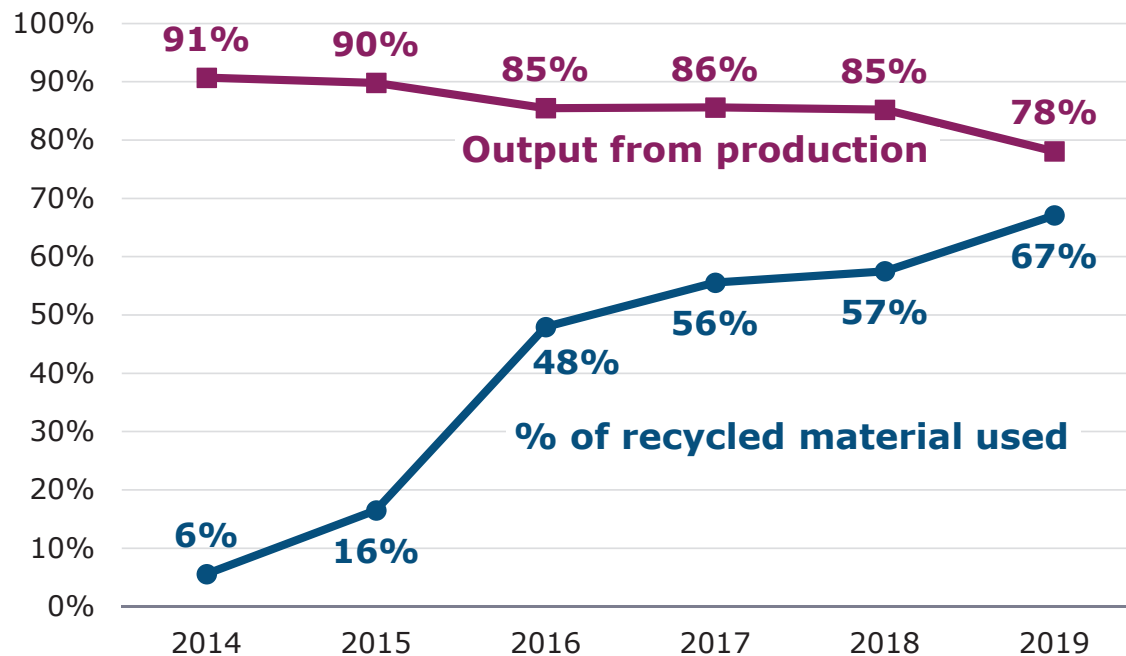




LEVEL
2

ENVIRONMENTALLY EXCELLENT – BUT NO GAIN WITHOUT PAIN

Output production versus recycled content (Post Consumer Recycled)



Production output substantially down

10% down in output means 10% less chargeable volume and has a direct cost on profitability of the operation

Unpredictable

Also – a more volatile production environment, varying with batches of the incoming material

Working environment

Requires investment in ventilation and other work-related improvements



END OF THE DAY – IMPROVED UNDERSTANDING NEEDED TO ACHIEVE AN IMPROVED ENVIRONMENTAL FOOTPRINT THROUGH RECYCLED PLASTICS

Looks/exposure
versus
environmental
footprint

The way
to attack
littering
problem

Meeting
customer
demand and
loyalty/green
profile

The cost of
producing is
substantially
higher than
with virgin
materials

The
quickest (only?)
way to reaching
the EU targets
on circularity



We are ready to move



TRIOPLAST