



Sustainable Products

Towards Circular Economy

ANTEX company overview

continuous synthetic yarn manufacturing

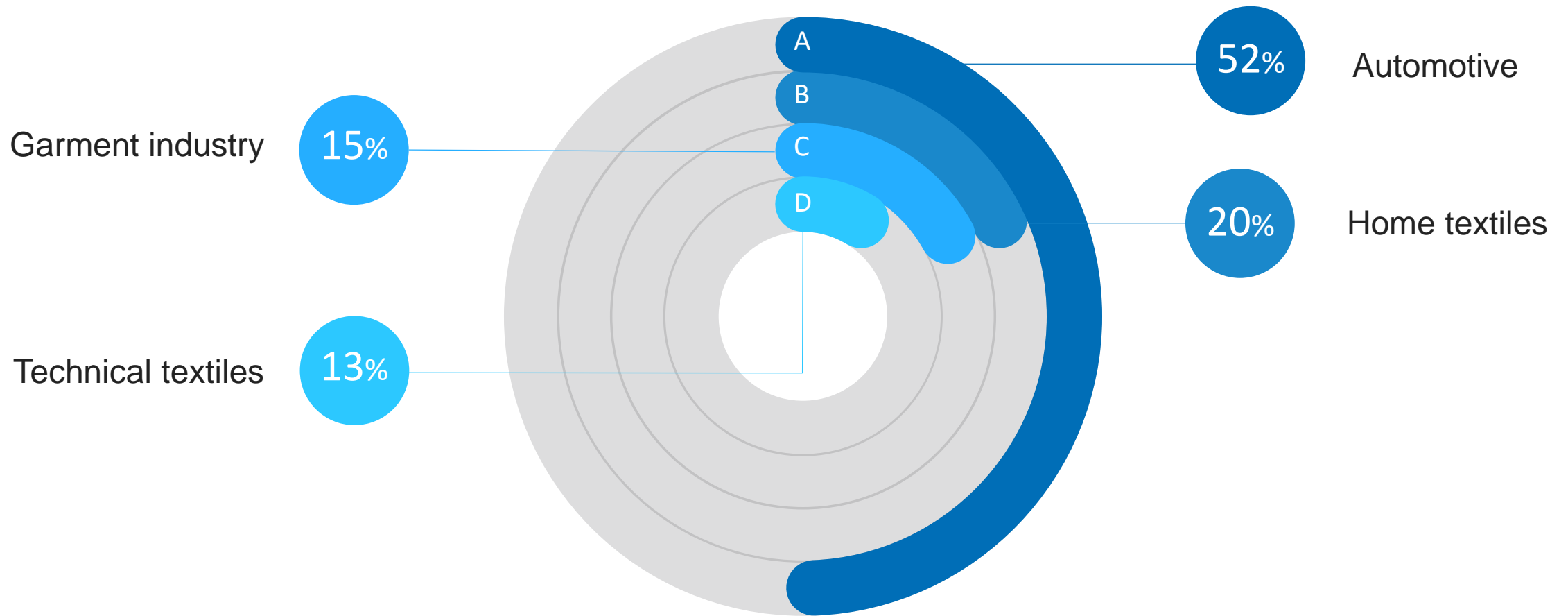
- 130 M€ Group sales
- 3 production sites : Spain (1969), Brazil (2000) and Mexico (2012)
- 900 employees
- 30.000 tons yarn production
- IATF 16949
- GRS

Antex locations



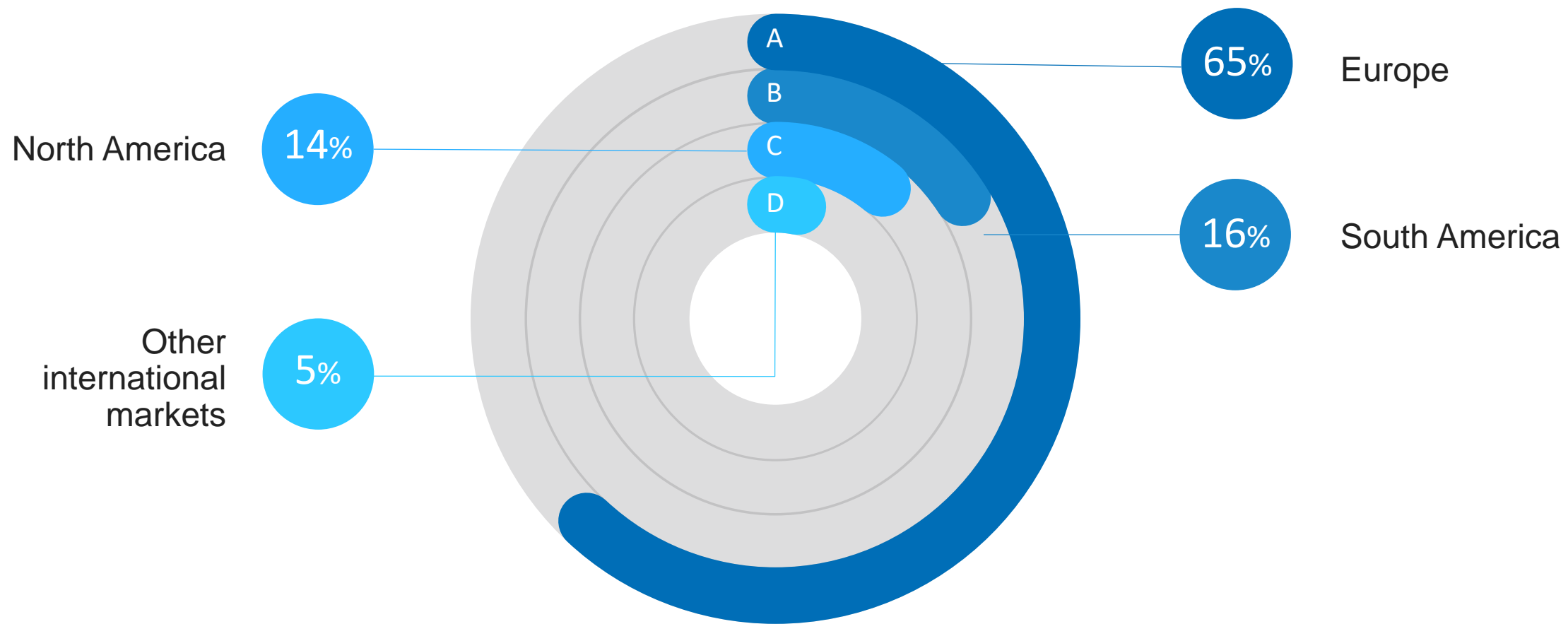
Main markets

2019



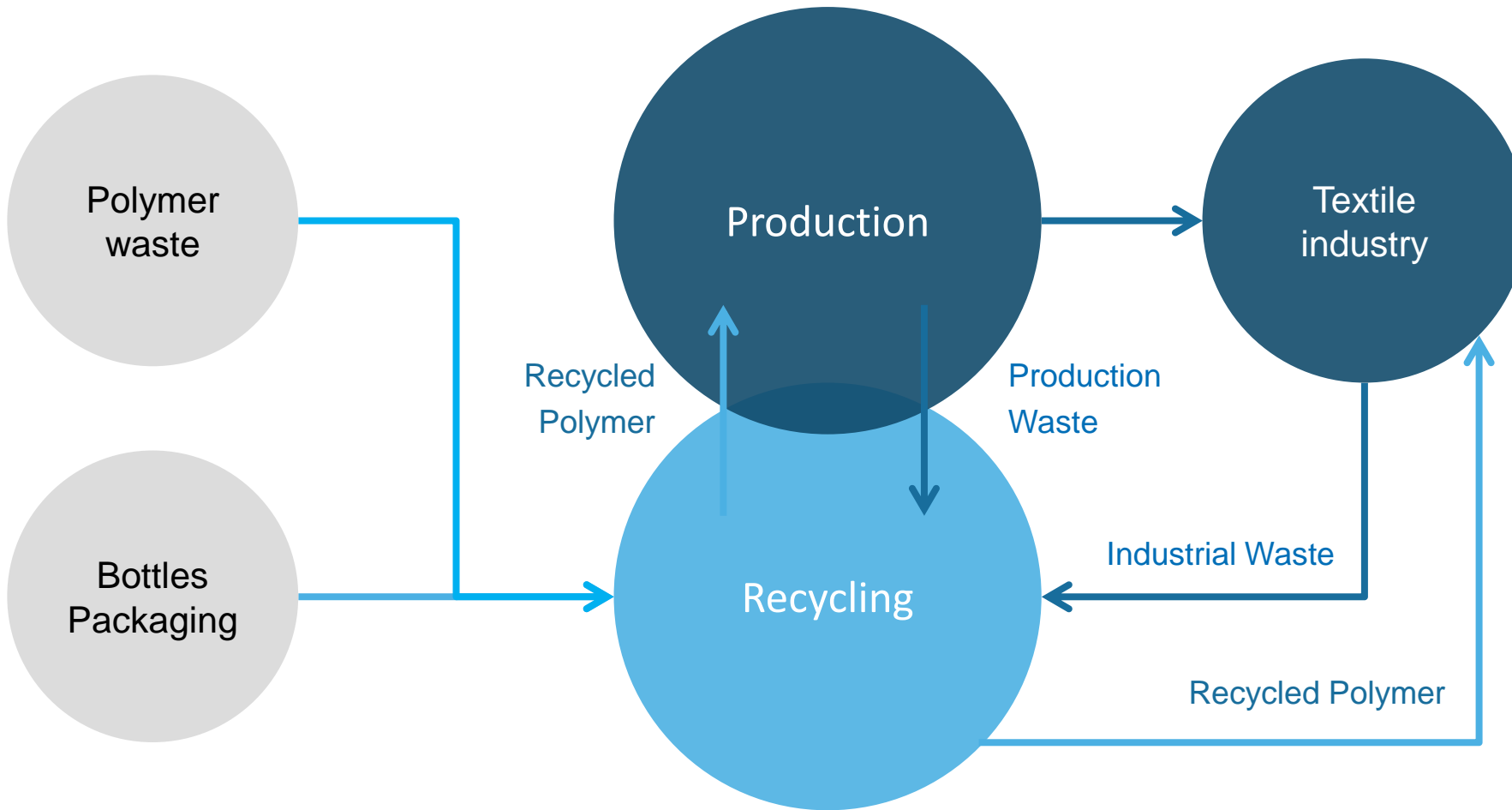
Sales distribution

2019



Antex recycling

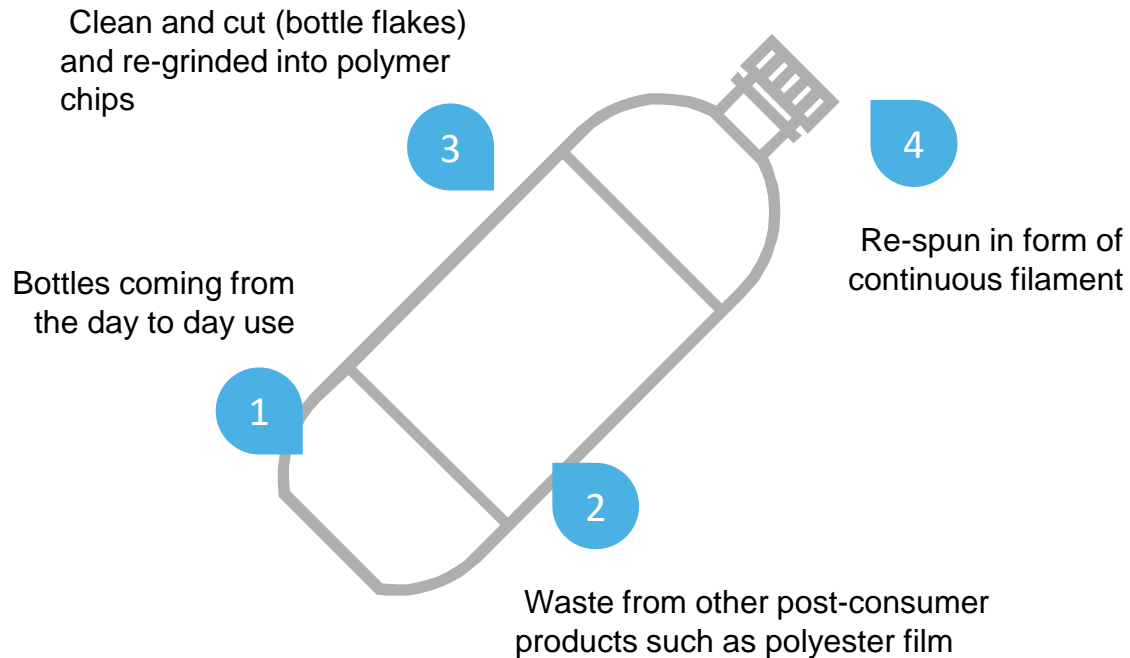
YNVIRON™



Post-consumer waste

bottle PET

YNVIRON™



Antex is producing yarns coming from 100% recycled PET bottles.

The quality of the yarn and the range of products that can be obtained is the same as the ones coming from virgin polymer.

In 2018 the European production of bottle recycled yarn reached **1.500 t/y including more than 500 t/y in spun dyed,**

Most of the actual production of Antex could be dedicated to recycled polymer.

MADE WITH
Y'NVIRON™

SEAQUAL™

Together for a Clean Ocean

SEAQUAL™



SEAQUAL™ is an initiative with a mission to **keep our oceans free from plastic pollution** by up-cycling plastic marine litter into a wide range of high-quality materials.

SEAQUAL™ creates and manages **collaborations** between industry, NGO's, communities and both local and national authorities. Jointly with those collaborators SEAQUAL™ builds the infrastructure necessary to bring value to marine litter.

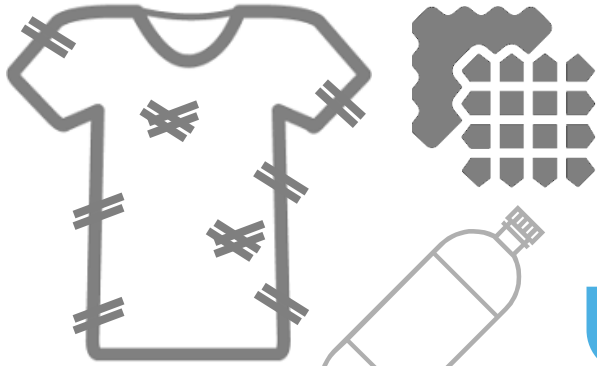
Textile to Textile Recycling

YARNBACK



Post-consumer and
post-industrial textile
waste

1



2

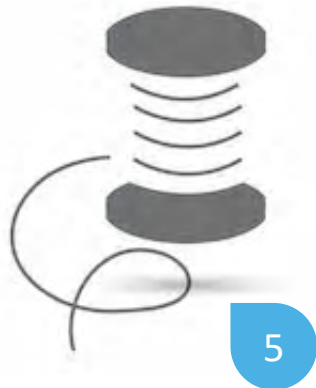
Post-consumer
recycled bottles

Mechanical or
Chemical Recycling

3

4

Filament Extrusion



5

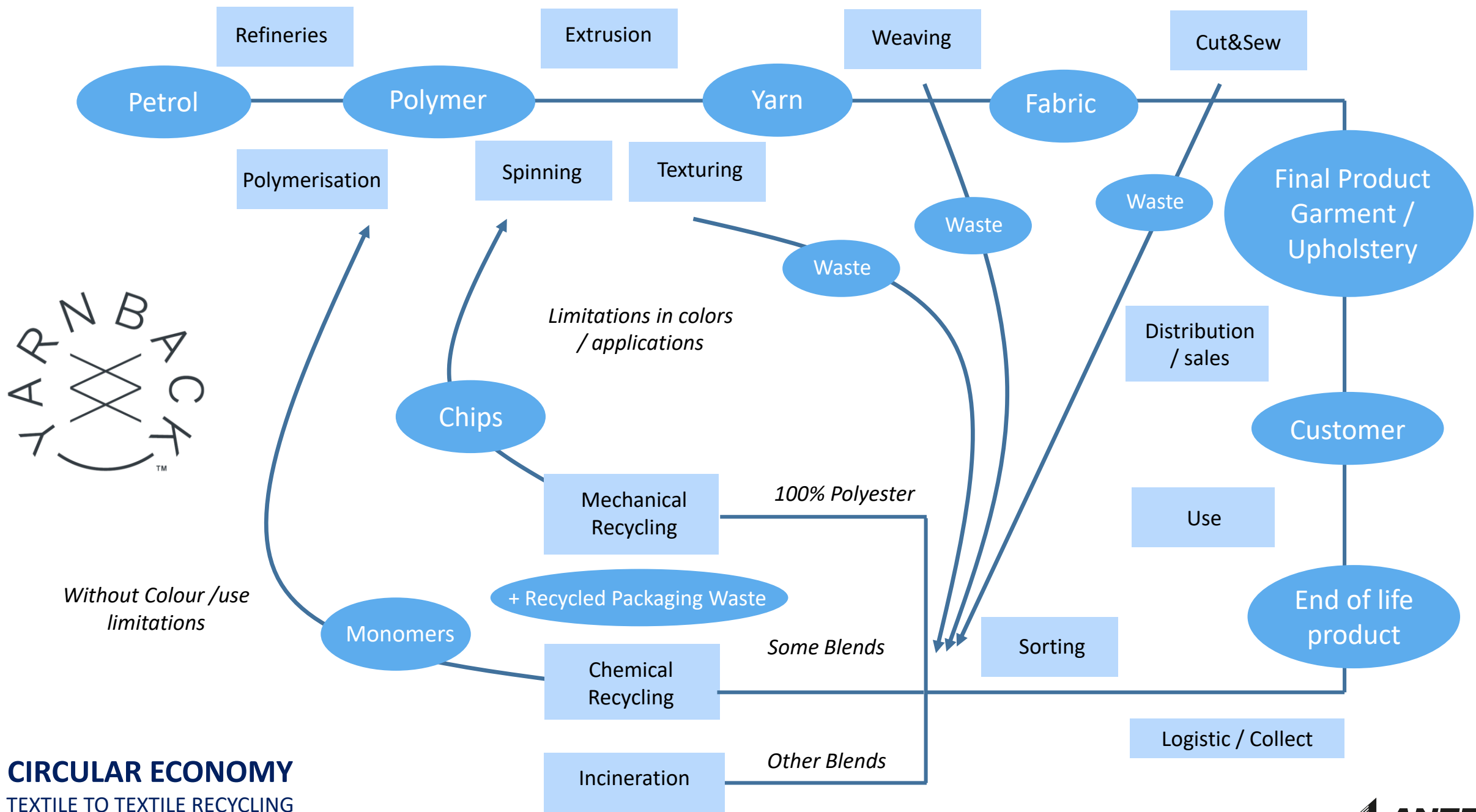
100% Recycled yarn
containing textile waste

During the production processes and the end of life of textile products, we are generating high amounts of waste.

As part of the textile Chain, in ANTEX we consider it is important to be responsible and reduce or recycle this waste. The final objective would be to go to **Zero Waste production systems**, and move from a linear economy to a real Circular Economy.

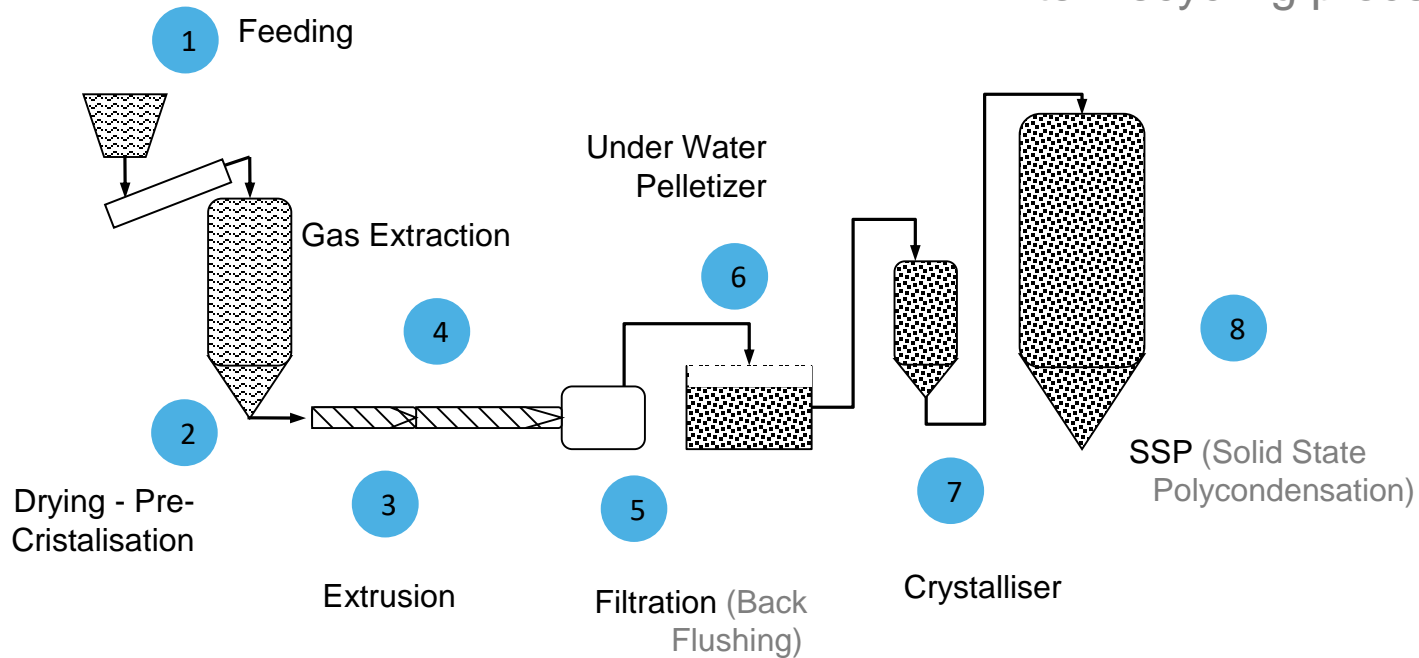
That's why for already more than **10 years** we are recycling our internal production waste and try to help other companies of the textile sector to recycle their waste.

We all should be part of the solution and together make this target a reality.



Post-industrial waste

Antex recycling process



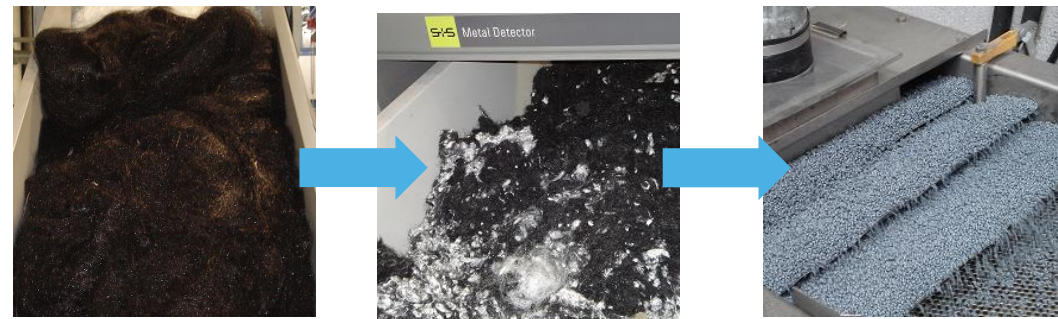
Antex Recycling is a Mechanical Process with Extrusion and pelletizing to transform waste into polymer chips.

Includes an SSP system to increase the IV level (Viscosity Index) depending on the application requirements.

It has a high Filtering level of impurities for high requirements. Part of the production is used in our spinning process of continuous filament.

The actual production is around 800 tones/year, but the installed capacity can produce 2.400 tonnes/year.

The quality and viscosity level of the recycled polymer makes it suitable for injection molding processes. Trials have been done with good results.

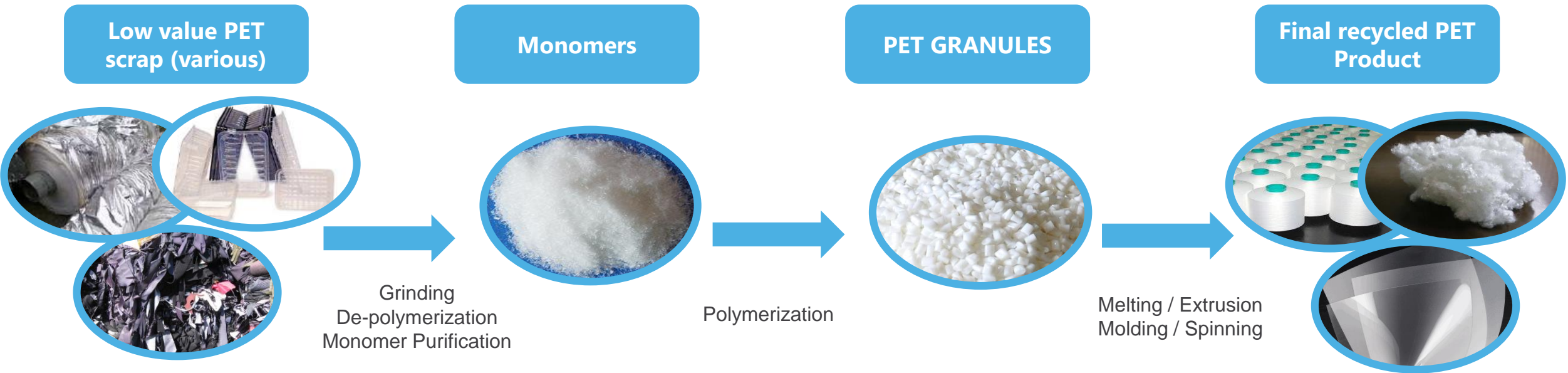


Spinning plant waste
Texturing waste

Recycled polymer

New Glycolysis Recycling Process

Under development



Chemical Process reduces the polymer **into original monomer** via a chemical reaction. The monomer is purified and re-polymerized to PET.

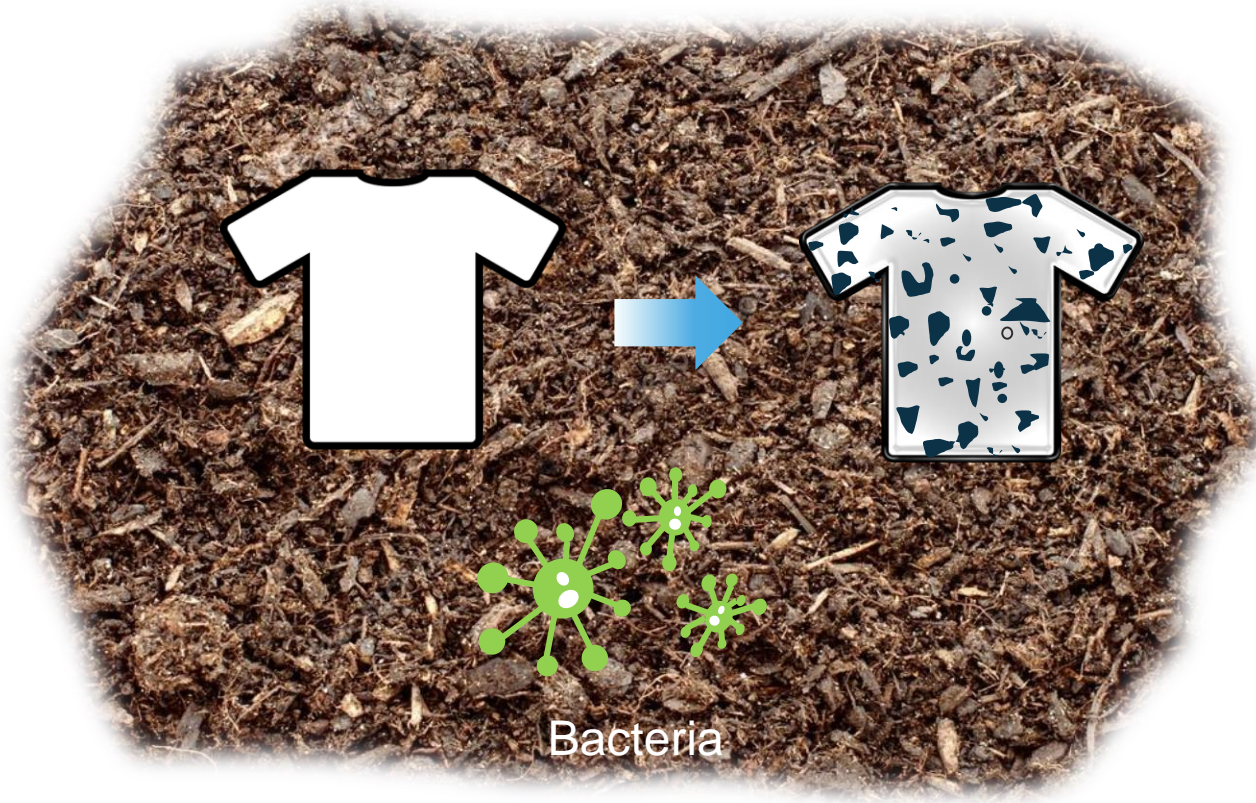
The advantages of this new developed technology are:

- the input material can be a PET containing material heavily contaminated (cotton, Polyolefin, metal,)
- excellent color, metal and DEG removal, providing as virgin PET output;
- the process has zero environmental impact.

Biodegradable Polymers

Modified polymers

Landfill

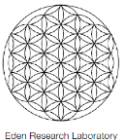


Bacteria

Most of synthetic polymers have a long biodegradation cycle, taking more than 200 years to biodegrade in landfill.

To improve recycling all synthetic textile waste, we have developed a family of yarns that reduce biodegradation cycle from more than 200 years to less than 5.

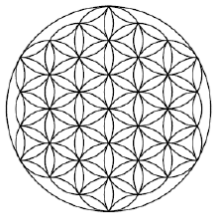
This is achieved with a polymer modification that lets bacteria contained in landfill be able to biodegrade the polymer in a much shorter time.



22% of biodegradation obtained in
106 days (ASTM D 5511-18)

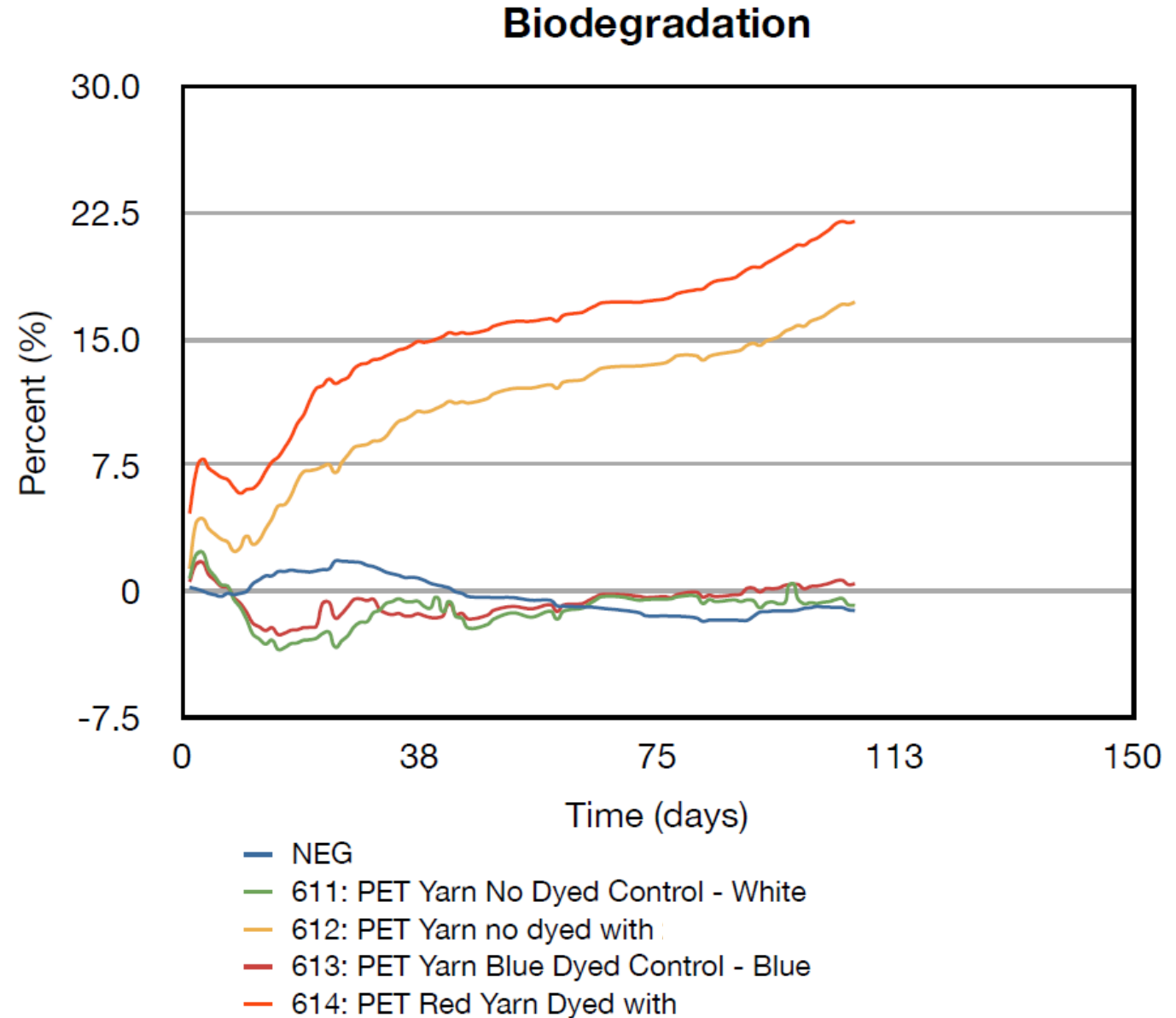
We have tested some yarns in virgin polymer ecru (612) and virgin polymer yarn dyed (614).

Biodegradation test performed at Eden Research Laboratory, under the norm: ASTM D 5511-18 during 106 days



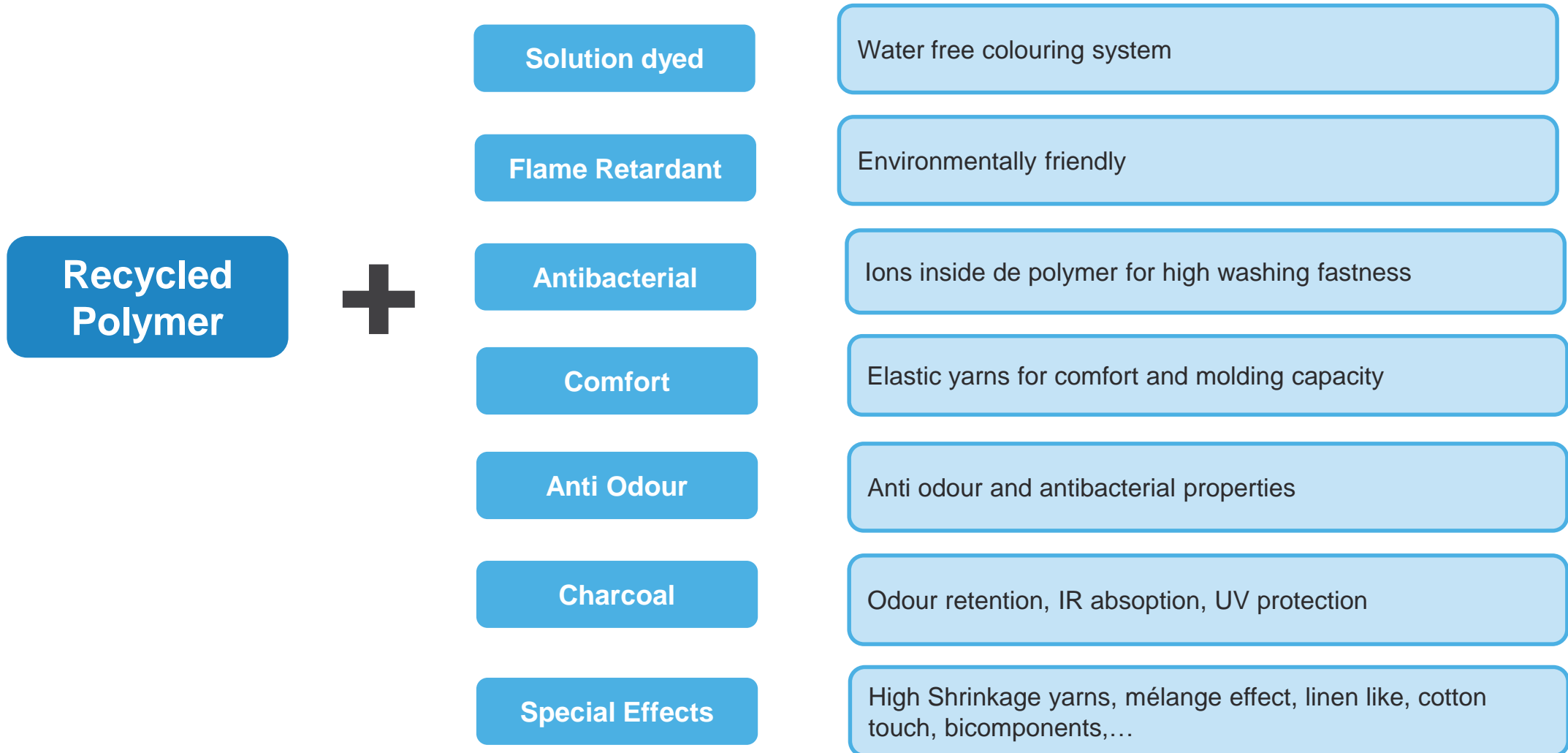
Eden Research Laboratory

We are now testing recycled polymer solution dyed with and without biomodification.

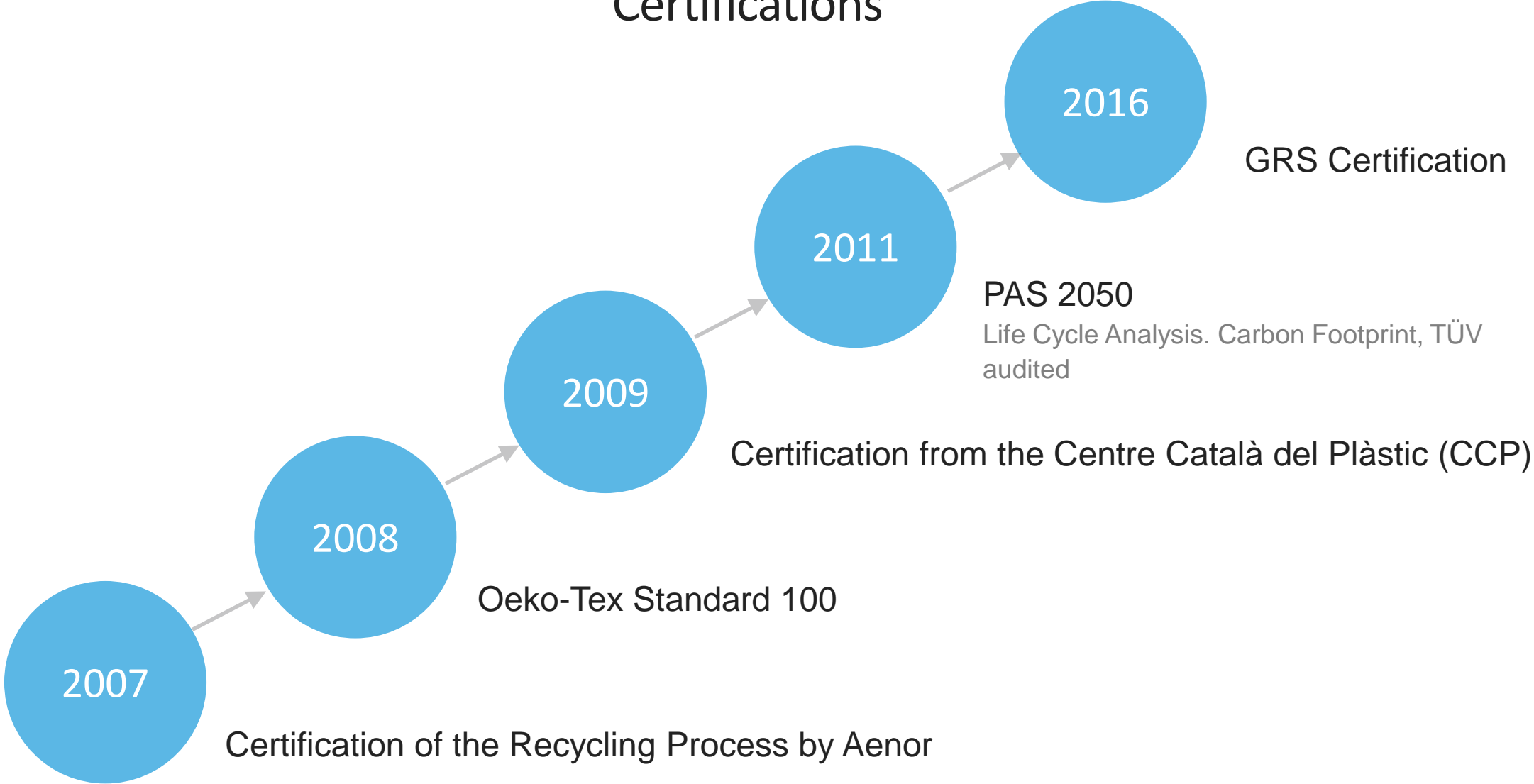


Special Recycled Products

Antex Technology and Know-How, allows to produce special yarns also on Recycled polymer base:



Certifications





THANK YOU!

antex.net

