

# *Gualapack*

## Waste Treatment and Recycling

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**asap**

let's change  
as soon  
as possible



# WELCOME!



I AM....

Sustainability Lead in Gualapack....

.....and Innovation Project Manager



[www.gualapack.com](http://www.gualapack.com)



# OUR KEY MARKETS



**Gualapack**

# A GLOBAL PRESENCE



***Gualapack***



*Gualapack*

# TECHNOLOGY CROSSOVER



**Gualapack**



## Today we will talk about:

How to manage the big problem of Waste  
and

Be proud to produce Packaging nevertheless!!!





# What did you already know?

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## TEST

### 1. What is the meaning of «biodegradable»?

- a) Something that disappears in less than 1 year in natural conditions (i.e. the environment) becoming CO<sub>2</sub>, H<sub>2</sub>O, CH<sub>4</sub> and minerals.
- b) Something that is made with renewable raw materials, not fossil based.
- c) Something that exposed to sunlight will break down into fragments until it disappears.

# What did you already know?

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## TEST

### **2. What is the Definition of Sustainability?**

- a) Economic support from rich nations to poor nations
- b) Ability to continue an action indefinitely without negatively impacting on future generations or on the possibility to continue such action in the future.
- c) Corporate policy against pollution.

## What did you already know?

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### TEST

#### **3. What is an LCA?**

- a) LCA = linear cost analysis, analysis of costs related to environmental impact
- b) LCA analysis of the environmental impact of a production process
- c) Life Cycle Analysis of a product with respect to its env impact.

## What did you already know?

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### TEST

#### **4. A recyclable product is always more sustainable?**

- a) No, not always, it depends on the LCA.
- b) YES if it is reused.
- c) Yes if I can throw it on the ground and it will biodegrade.

## What did you already know?

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### TEST

#### **5. Why is it important to empty a container before disposal?**

- a) In order to avoid food waste.
- b) Because residues can have an impact on correct recognition of the plastic.
- c) Because if plastic is wet it cannot be properly extruded.

## The 3 Pillars of Sustainability: Economic, Social, Environmental



**Sustainability:**

**Ability to continue an action indefinitely without negatively impacting on future generations or on the possibility to continue such action in the future.**

**It must be seen in a holistic way, including Planet, Profit & Population.**



sustainability



## Packaging is Useful!

### Flexible Packaging :

#### Advantages for the Environment:

Light weight, transport savings

Raw material minimal use

Hygienic, does not break



## Flexibles in Italy



**100% FLESSIBILE**  
**0% DISCARICA**

Today multilayer structures are not recyclable, and therefore they are burned for energy. However they must be thrown into the PLASTIC bin, not the black bin!



## «Circular Economy»



LINEAR ECONOMY:  
produce, consume,  
throw.

CIRCULAR ECONOMY:  
DESIGN FOR

- Reduce
- Reuse
- Recycle !

## Circular Economy



**To recycle at the end is not enough !  
It is more effective and important to design for circularity BEFORE!**



Habits change.....



## Habits change.....

«Niente plastica a scuola», Sala e Mengoni distribuiscono borracce



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Slide Show

Circa 50 bambini che iniziano la prima elementare hanno ricevuto dal sindaco di...





## EUROPE: EU Plastics Strategy – 2018



**By 2030 all packaging placed on the EU market will have to be either reusable or recyclable or compostable.**

# Plastic Packaging Waste Treatment



## Where does my packaging go after disposal?



Purchase



Waste collection



Waste management center



Sorting and Selection



Recycling



New Plastic!

## SORTING PHASE

Physical sorting



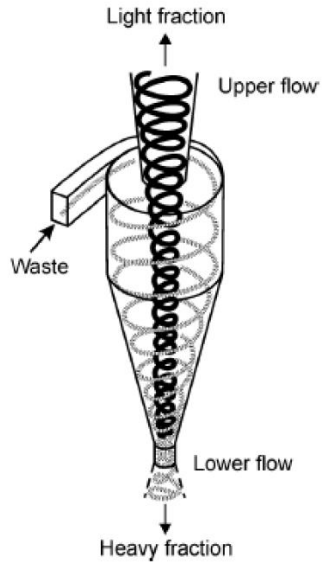
*Figure 3*

*Drum screen*



## SORTING PHASE

### Physical sorting



HYDROCYCLONE

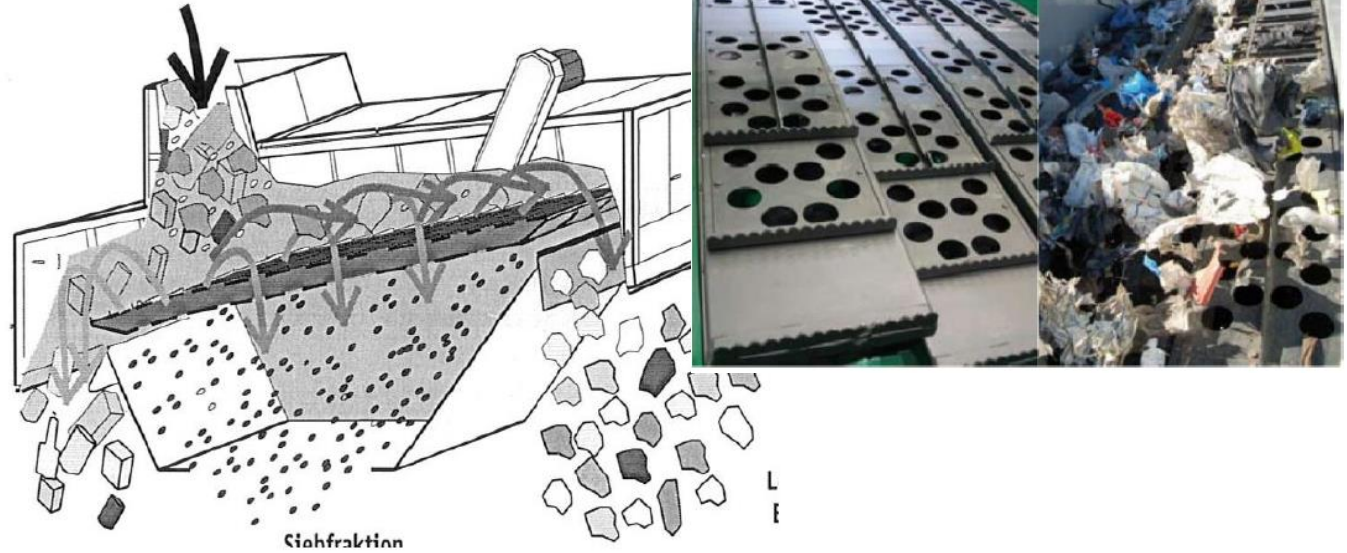


Figure 8

Separation of materials by ballistic separator.



## SORTING PHASE

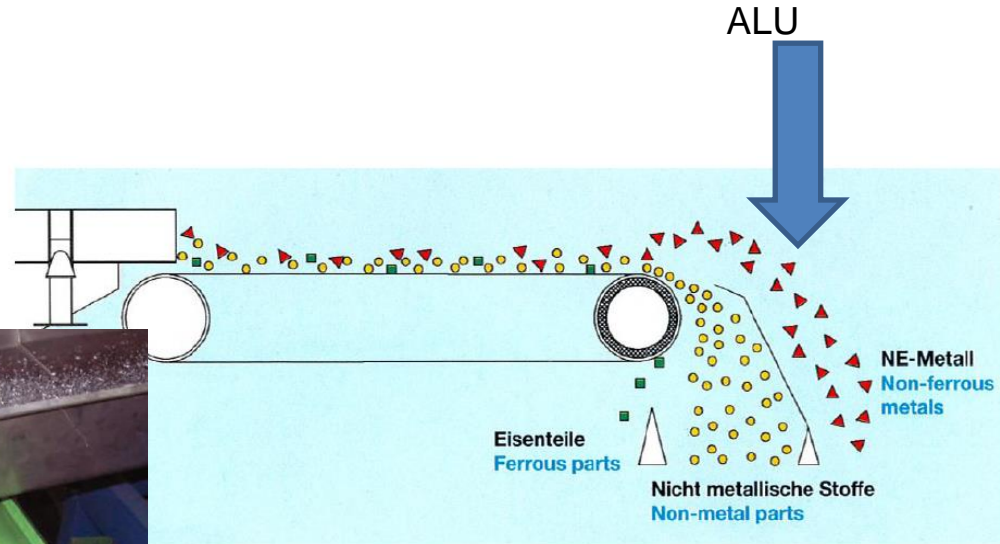
### Magnetic sorting



Figure 9 Overband magnet (used to separate larger ferro parts)



Figure 10 Drum magnet (used to separate small sizes ferro parts)

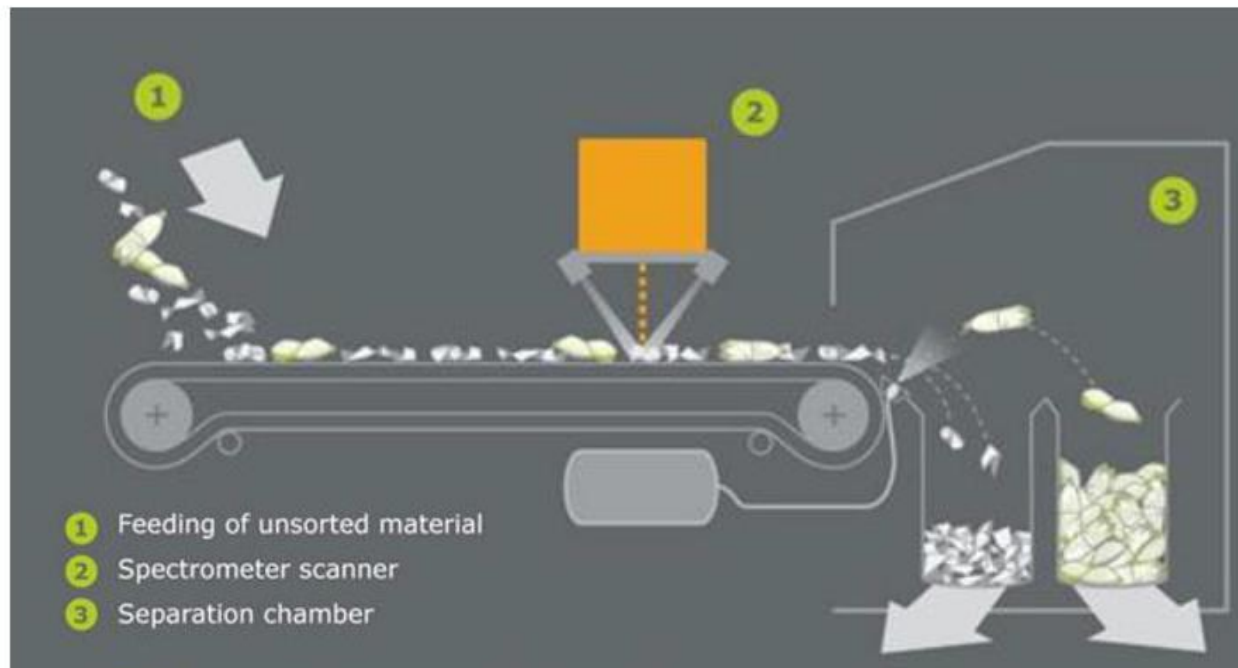


Eddie Current separator - principle of function(IUT, 2010)



## SORTING PHASE

Chemical sorting: NIR



## SORTING PHASE

### Chemical sorting: NIR

The NIR Infrared separator is typically applied for separation of

- Mixed plastics by polymer type (except those coloured with carbon black)
- Wood and textiles
- Paper, cardboard and packaging
- PVC in RDF

[https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=PLASTIC\\_ZERO\\_annex\\_d32\\_action\\_4.2\\_report\\_on\\_assessment\\_sept2013\\_final.pdf](https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=PLASTIC_ZERO_annex_d32_action_4.2_report_on_assessment_sept2013_final.pdf)

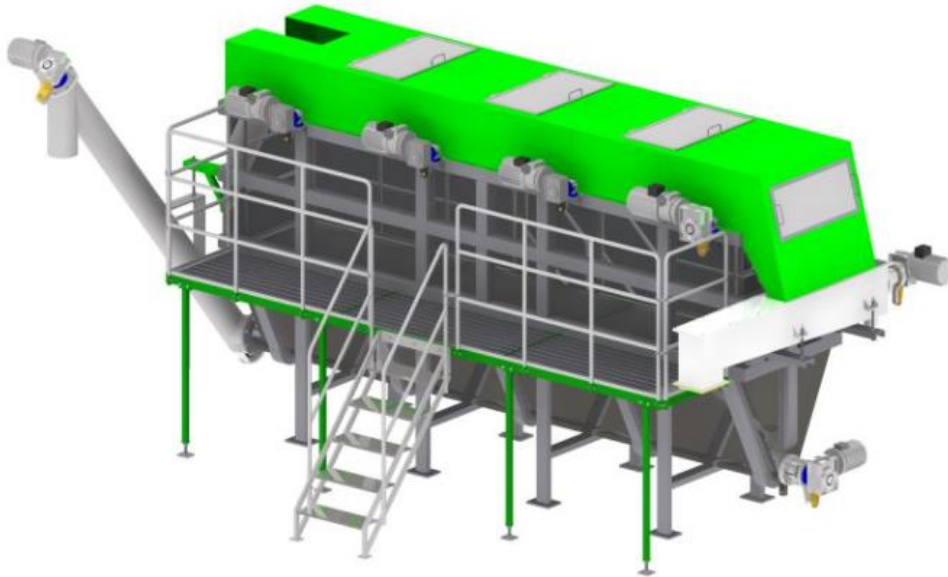


Figure 14

RedWawe NIR infrared sorter

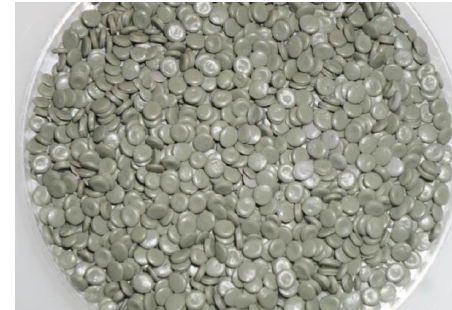
## SORTING PHASE

Chemical sorting: Density

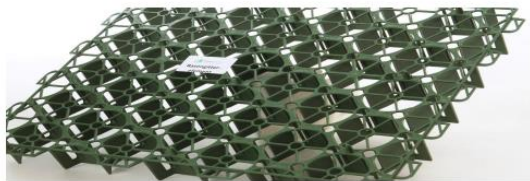


Floatation principle: objects heavier than water or another fluid will sink, the lighter ones will float = separation.

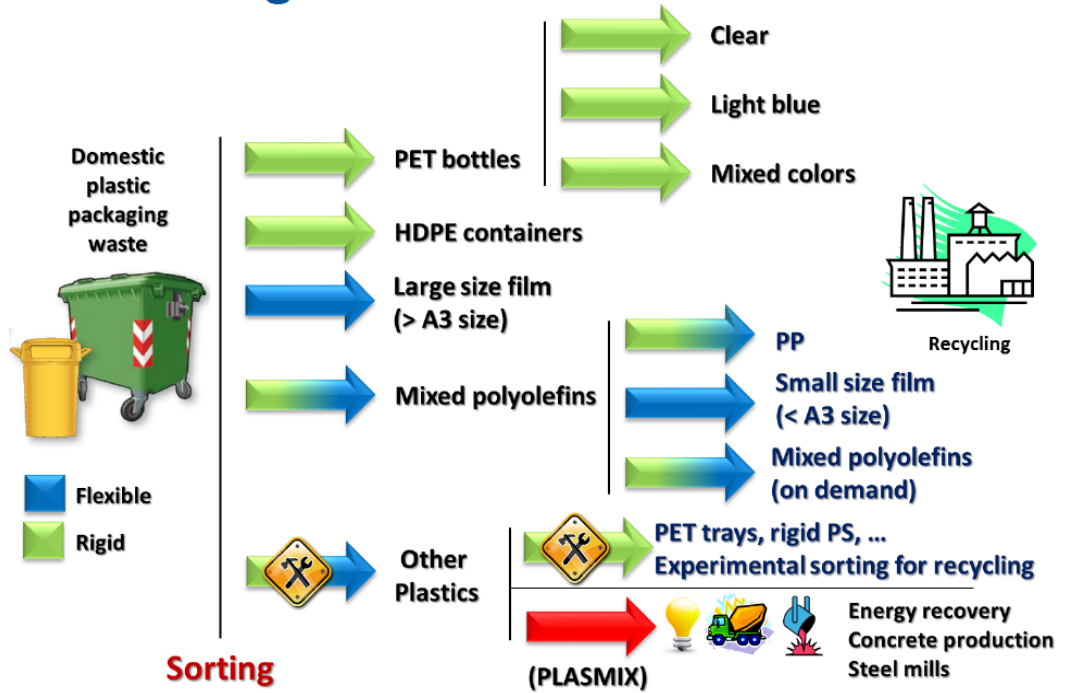
## FINALLY: EXTRUSION



## From Plastic to Plastic: a new Life !



### COREPLA Sorting





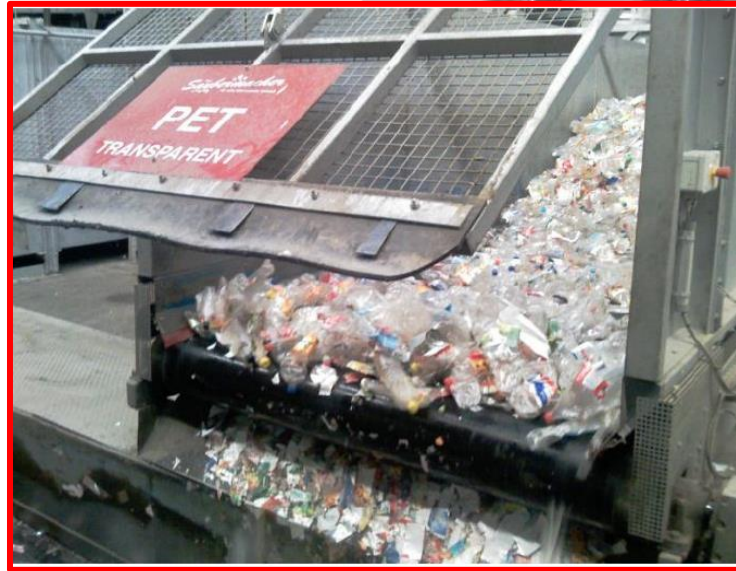
### PET reprocessing plant Wöllersdorf, Austria

This plant produces secondary PET raw materials.



Figure

Wöllersdorf



So, which pack has less impact on the environment?

The flexible pouch = the **LIGHTEST**!



## LCA: Life Cycle Analysis

**A Life Cycle Analysis of a Product must consider:**

- 1. Perimeter**
- 2. Raw Materials**
- 3. Transportation**
- 4. Production Processes**
- 5. Transportation**
- 6. End of Life**

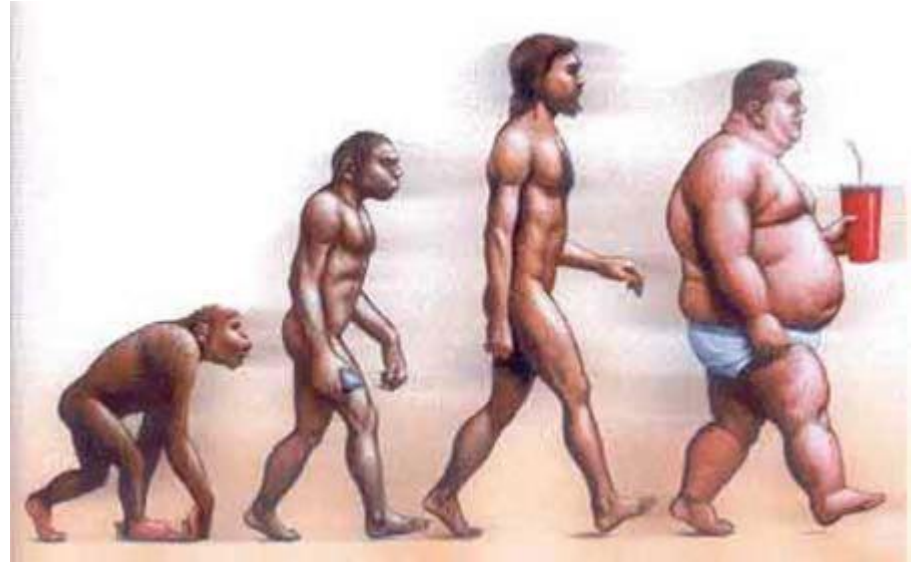
The result is given in GHG (Green House Gas equivalents) = emissions of CO2 equivalents, but also water consumption, toxicity for humans, eutrophication, etc.



# A Sustainable Life!



## The Great Problems of the World: hunger and obesity(1)





## Migrations (2)



## Climate Change(3)





# *Gualapack*

And .....Plastic! (**the easiest to solve !**).





Is it the fault of Plastic? ... or of the **Consumer??**



**CHI È STATO**  
a buttare il rifiuto per terra?

Il fighetto?      L'intellettuale?      Il prete?








La maestra?      Il manager?      L'alternativo?

La prossima volta  
**FICCATELO IN TASCA**  
...appena nell'appuntato e smontato

"FICCATELO IN TASCA" è il movimento contro i rifiuti lasciati per strada.

## How to Recycle Correctly

### Plastic Resin Identification Codes

						
PETE	HDPE	PVC	LDPE	PP	PS	OTHER
Polyethylene Terephthalate	High-Density Polyethylene	Polyvinyl Chloride	Low-Density Polyethylene	Polypropylene	Polystyrene	Other

1. No greasy or dirty paper or tissue in the paper collection
2. ONLY packaging is accepted in the plastic bin.
3. Metals are OK to be disposed w plastic.



## Attention! the ORGANIC bin

- If a pack says «**compostabile**», then I can throw it away in the brown bin (organic).

**NOT** in the plastic bin.



## What each of us can do

- ✓ NEVER LITTER! AND SCOLD WHO DOES
- ✓ EMPTY ALL FOOD from a PACK
- ✓ READ INSTRUCTIONS FOR DISPOSAL ON PACK
- ✓ CAREFUL OF PAPER: FSC O PEFC
- ✓ BEWARE OF FAKE MARKETING !



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THANKS !

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