



Consorzio Nazionale  
per la Raccolta,  
il Riciclo e il Recupero  
degli Imballaggi  
in Plastica

# PET Packaging: how to improve circularity via the latest sorting technologies?

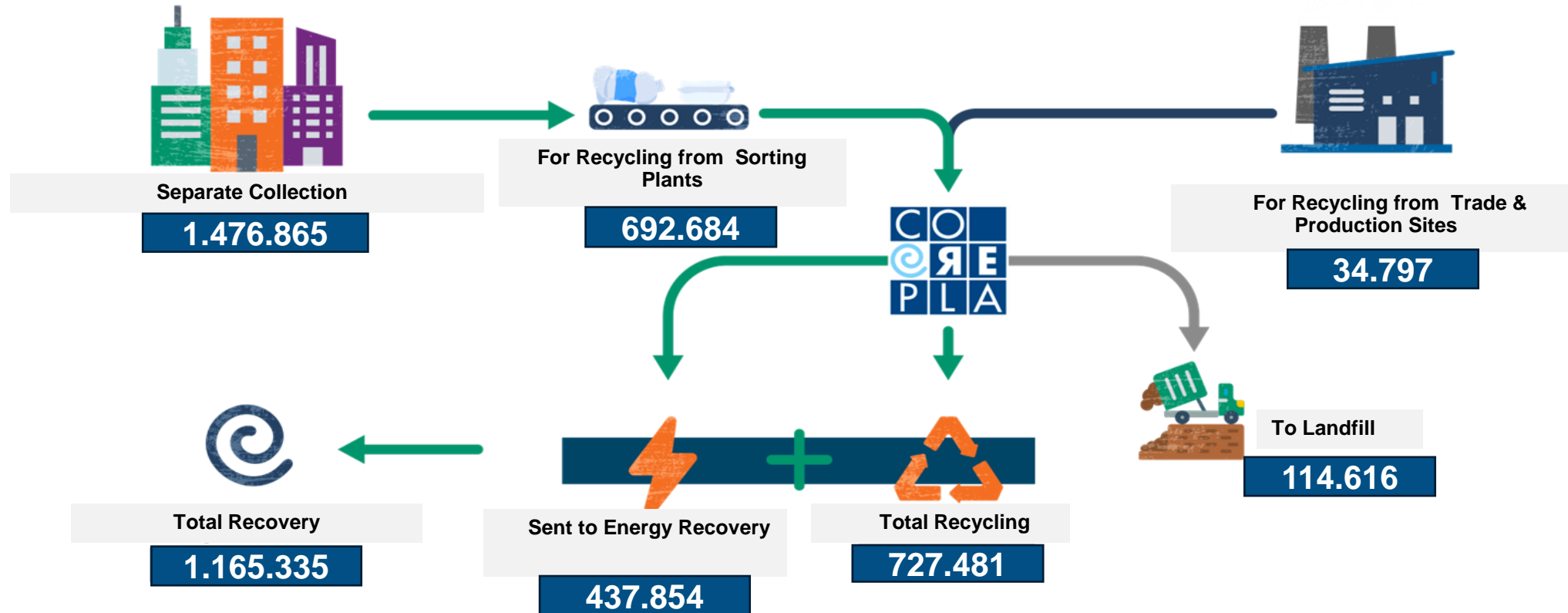
*Petcore Europe Online Webinar*



ANTONIO PROTOPAPA, 19.03.2024

# Corepla at a glance

Demand 2.2 Mn Ton



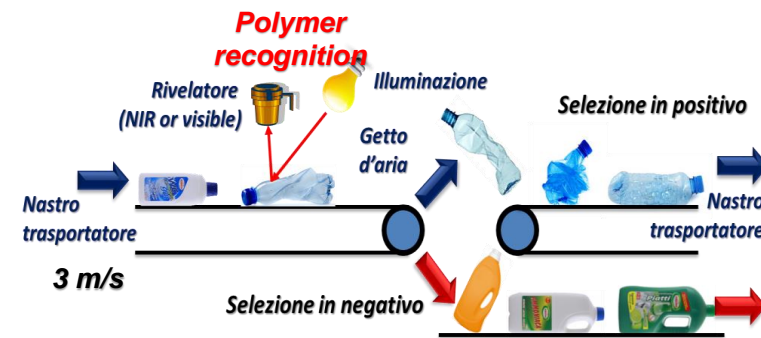
# Sorting Centers in Italy





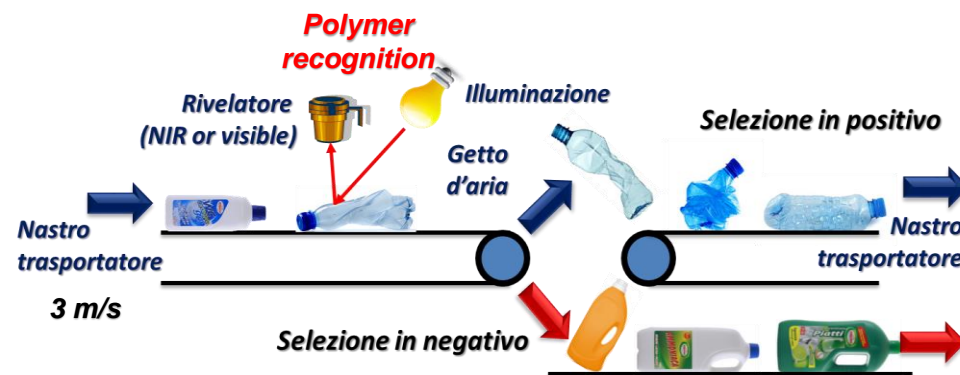
# Sorting Process

- **Small fraction** separation of non selectable material (< 5x5 cm)
- Separation of **flexible packaging** from **rigid packaging**
- **Automating sorting** by polymer/colour into **homogeneous flows**
- Possible mistakes correction to be made by **operators**



# Improving PET Circularity

- **Small fraction** separation of non selectable material (< 5x5 cm)
  - Sorting small PET containers from other materials
- Separation of flexible packaging from rigid packaging
- Automating sorting by polymer/colour into homogeneous flows
- Possible mistakes correction to be made by operators



# Improving PET Circularity

- **Small fraction** separation of non selectable material (< 5x5 cm)
- Separation of **flexible packaging** from **rigid packaging**
  - Improve performance of **rotational vibrating screen** and **ballistic separators**
  - Improve the **removal of lightweight** materials
- **Automating sorting** by polymer/colour into **homogeneous flows**
- Possible mistakes correction to be made by **operators**



- **Small fraction** separation of non selectable material (< 5x5 cm)
- Separation of **flexible packaging** from **rigid packaging**
- **Automating sorting** by polymer/colour into **homogeneous flows**
- Possible mistakes correction to be made by **operators**







# Improving Circularity for PET Bottles

- *COUNTRIES WITHOUT DRS*

- **Improve** the collected PET bottles **quality**.
- **Separate Food** bottles (clear) from **Non-food**.
- **Reduce contamination** from other PET streams **during the sorting process**.
- **Reduce contamination** with PET in **other streams** (mainly in Mix PO).
- **Find** end use **applications** for **Mix PET**.
- **Sorting** of R-PET made bottles: **variable colours** and **composition**.

- *COUNTRIES WITH DRS OR RVM SELECTIVE PET BOTTLES COLLECTION*

- **Flexibility in feeding** standard sorting plant (if needed).
- **Sorting** of R-PET made bottles: **variable colours** and **compositions**.
- **AI and Robot** for sorting **Mix PET** (sleeved, opaques, etc).



# Improving Circularity for other PET Streams

- *COUNTRIES WITHOUT DRS*

- Separate **Trays from Bottles**.
- Separate **mono-material** from **multi-material or multi-layer** Trays.
- Separate **food grade** trays from other **thermoformed** products.
- Sorting a proper Mix PET suitable for **Chemical Recycling and De-polymerization**.

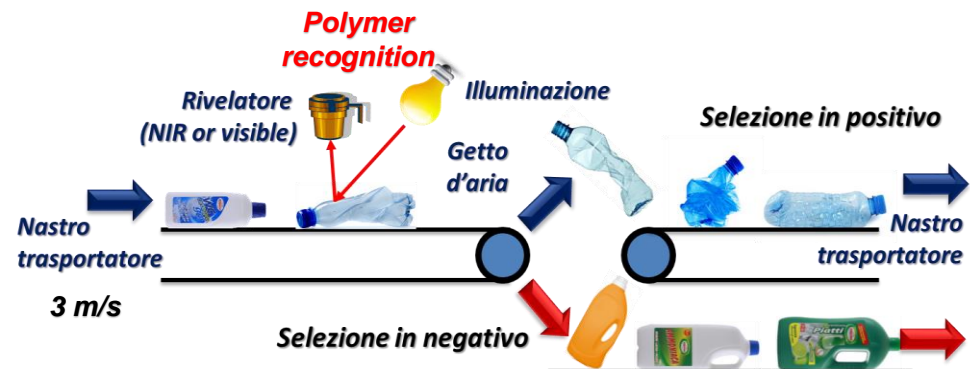
- *COUNTRIES WITH **DRS** or **RVM** SELECTIVE PET BOTTLES COLLECTION*

- **Flexibility in feeding** standard sorting plant (if needed).
- Separate **mono-material** from **multi-material or multi-layer** Trays.
- Separate **food grade** trays from other **thermoformed** products.
- **AI and Robot** for sorting **non-bottle Mix PET** suitable for **Chemical Recycling and De-polymerization**



# Improving PET Circularity

- **Small fraction** separation of non selectable material (< 5x5 cm)
- Separation of **flexible packaging** from **rigid packaging**
- Automating sorting by polymer/colour into homogeneous flows
- **Possible mistakes correction to be made by operators**
  - **Artificial Intelligence** applied to sorting technology
  - Use of specific **Robot** for **smart and fast selection** of PET products





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# Thanks!

[corepla.it](https://www.corepla.it)