



Polypropylene Color Detection and Closed Loop Recycling

AN INNOVATIVE APPROACH BY GME RECYCLING

Today's Agenda

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Problem Statement and Objectives

2

Overview of GME's Innovative Recycling Plant

3

Output Products and Benefits

4

Applications & Conclusion

5

Q&A and Discussion

CHALLENGES IN RECYCLING POLYPROPYLENE:

CONTAMINATION

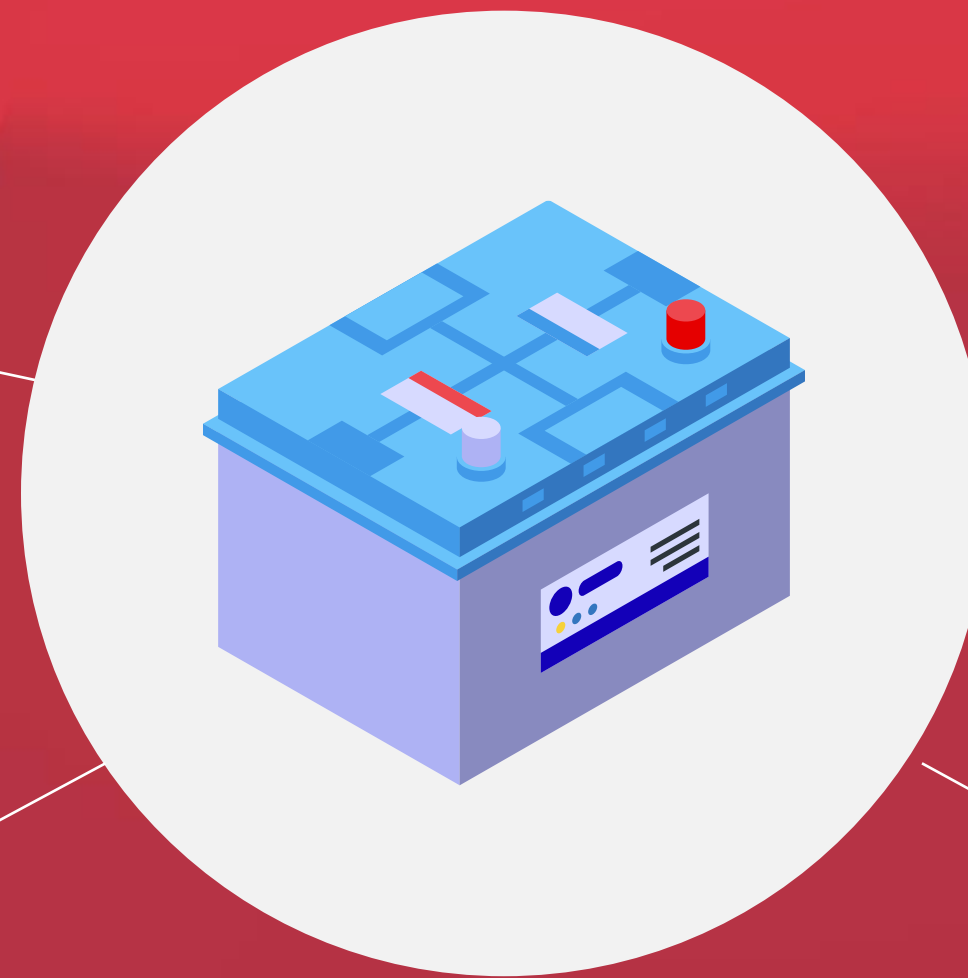


Presence of lead and impurities.

COMPLEX COMPOSITION



Heterogeneous nature of battery casings.



ENVIRONMENTAL IMPACT



Improper disposal leads to pollution.

ENHANCE POTENTIAL



Enhance the potential of PP material both for recyclers and manufacturers

GME'S GOALS



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GME's Innovative Recycling Plant

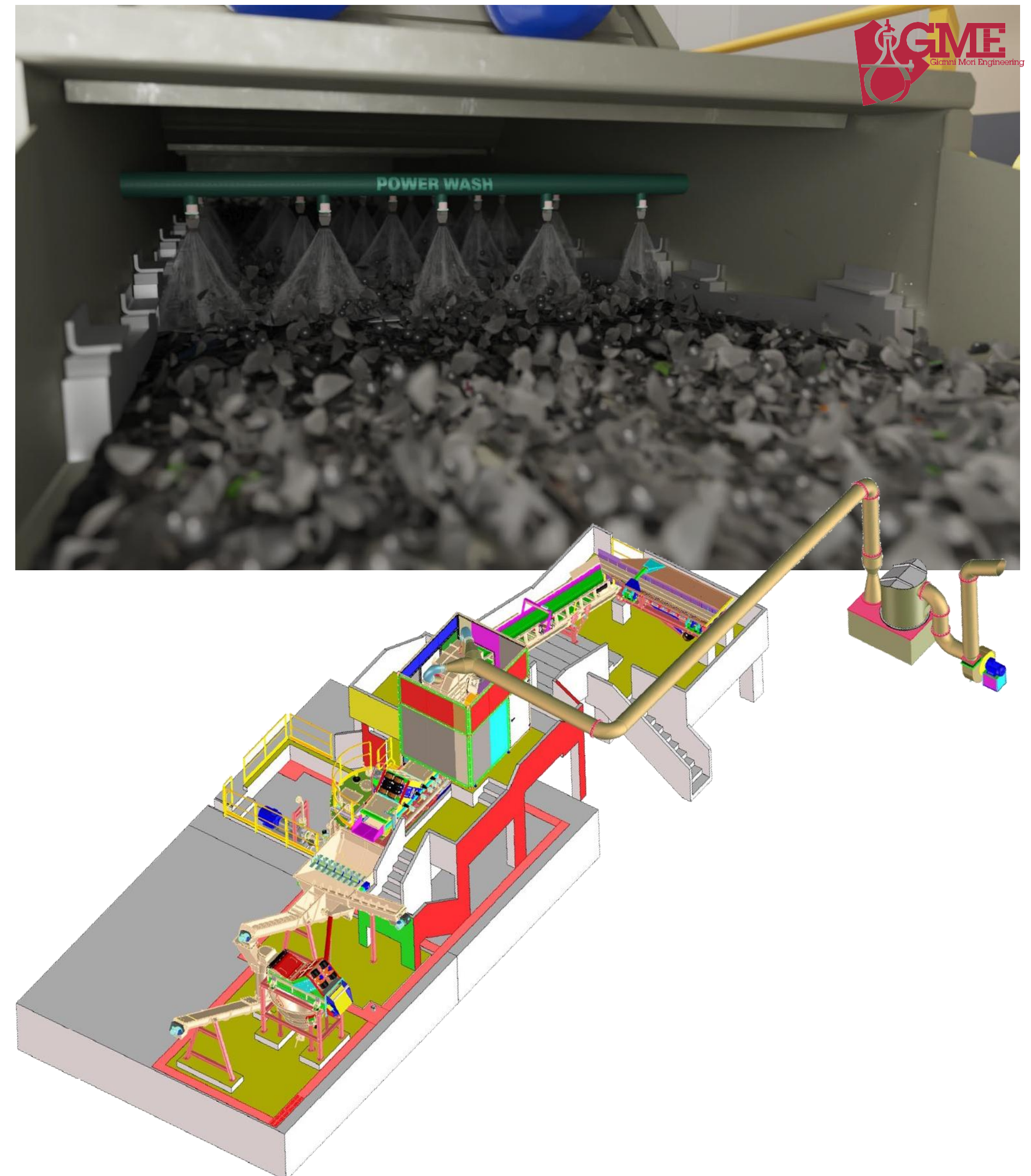
STEP 1

Shredding, Washing, and Decontamination

- Battery casings are shredded to dimensions ~ 1 cm
- Dried by a dedicated an innovative infrared light system, preventing overwhelming, melting and/or pollution.

Benefit already from The Gravity Breaker:

- PP in Chips dimensions ~ 10 cm
- PowerWash achieves <200 ppm lead contamination.



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GME's Innovative Recycling Plant

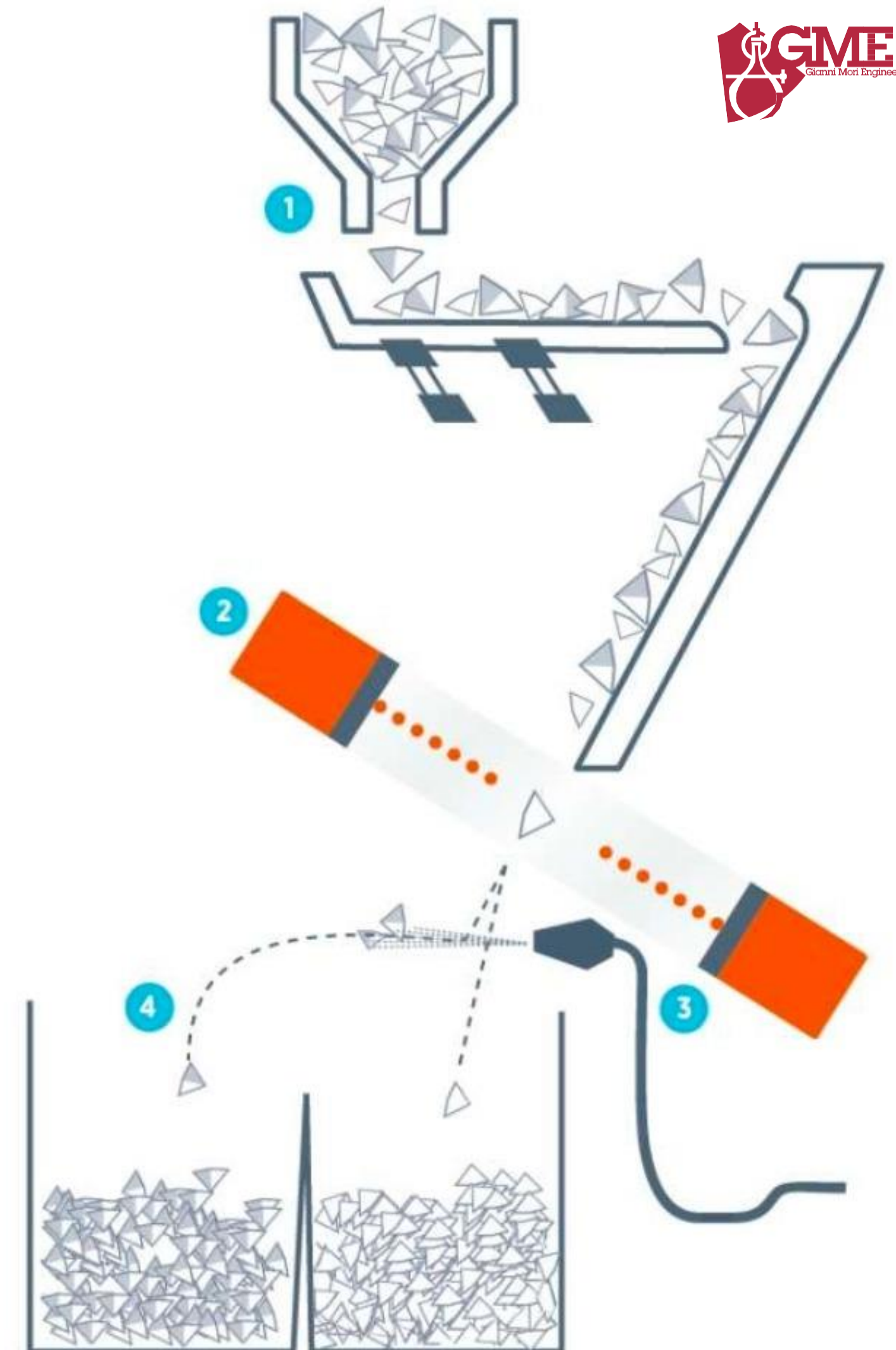
STEP 2

Advanced Sorting and Separation

- Wavelength-based color detection for precise sorting.
- Ensures high-quality polypropylene recovery.
- PP sorted by polymer color.



- 1 Infeed hopper & shaker
- 2 Sensors
- 3 Eject valves
- 4 Accept/Reject





A photograph showing two bowls of crushed candy canes. On the left, a silver metal bowl is tilted, spilling bright red crushed candy canes onto a white surface. On the right, a clear glass bowl is tilted, spilling bright green crushed candy canes onto the same white surface. The candy canes are broken into small, irregular pieces. A red rectangular banner with white text is centered over the image.

A PICTURE IS WORTH A THOUSANDS WORDS

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GME's Innovative Recycling Plant



STEP 3

GME Extruding line

- PP Flakes are de-gased and extruded to dimensions ~ 0,6 cm
- Washed and dried
- Stored in Big Bags or Silos



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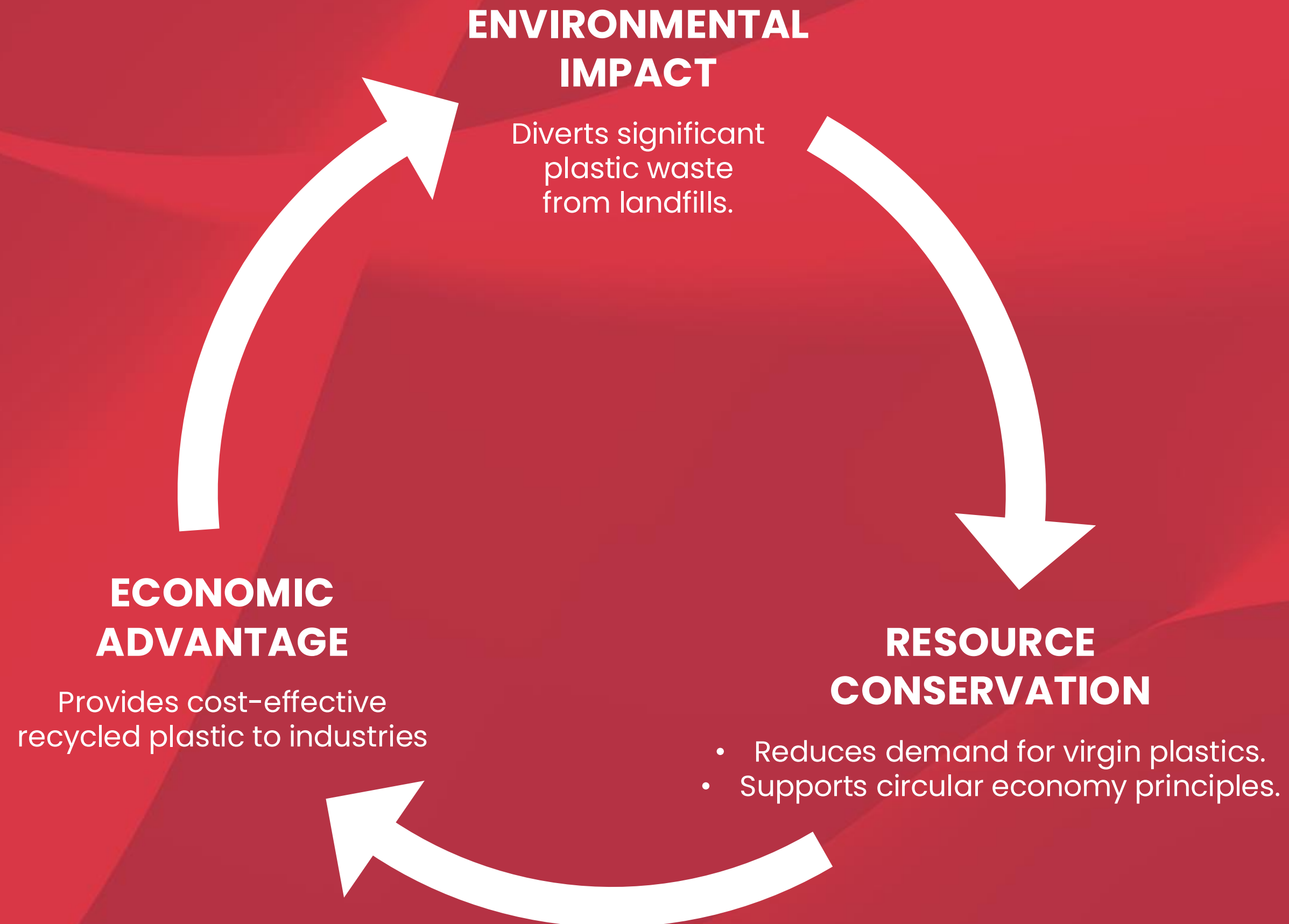
Output Products

PP Flakes

- Size: ~1cm
- Use: Ready for color sorting and industrial applications.

PP Granules

- Size: ~0,6cm
- Use: Injection molding for new product extrusion.



- **GME'S APPROACH IS ENHANCING AND PUTTING THE PLASTIC RECYCLING AT THE SAME LEVEL OF LEAD**

Battery Casings:
High purity makes
it suitable for new
casings.

Consumer Goods:
Used in containers,
packaging, and
household items.

- **THE PROCESS ACHIEVES HIGH PURITY AND CONTRIBUTES TO SUSTAINABILITY.**
- **ENVIRONMENTAL, ECONOMIC, AND RESOURCE CONSERVATION BENEFITS ARE HIGHLIGHTED.**

Q&A and Discussion



YOUR **RECYCLING** MANUFACTURER EXPERT

