



PETROCHEMICALS

# Rewind® PET

**Axens**  
SOLUTIONS

## The Technology to Upcycle any Waste PET into Food Grade PET



PET is widely used to produce plastic packaging. However, only around 20% of this material makes its way to recycling plants. The remaining part is either incinerated, disposed, landfilled or leaked into the oceans.

Along with this observation, consumer pressure to increase recycled content in products is raising. In response, major brands are making commitments to use in their packaging at least 50% recycled content by 2025 while guaranteeing the quality of the recycled material incorporated. Additionally, European directive establishes a minimum proportion rate of PET recycled material in beverage bottles to 25% by 2025 and 30% by 2030 onwards.



recycled PET content in plastic bottles by 2030



of any plastic packaging waste in 2030

↑ European recycling ratio target

In Europe, with PET recycled food-grade pellet supply standing at approximately 11% of overall PET for bottles application - PET recycled demand is outpacing availability and the system is locked.

### Rewind® PET converting PET Waste into Resource

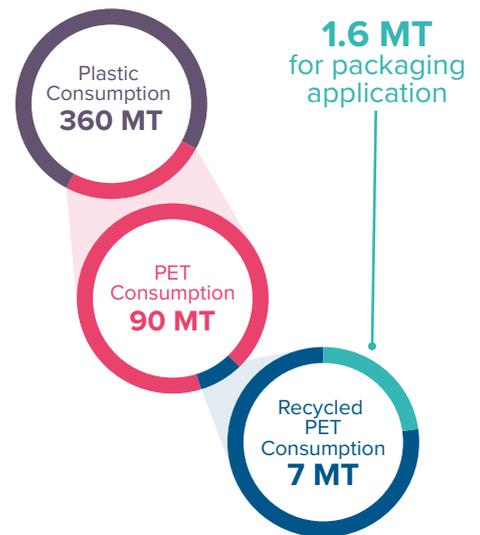
By proposing to unlock the current PET recycling solutions limitations, Rewind® PET is one of the answer to the European directive and market pressure.

Indeed, almost only the clear and light blue sorted PET is recycled back to



## BENEFITS

- 10 years operation experience of first bottle to bottle industrial unit
- Food grade compatibility
- Versatility toward any waste PET plastic
- Life Cycle Analysis (LCA): - 49% CO<sub>2</sub> equivalent emissions compared to fossil PET



↑ Worldwide plastic consumption in 2018

packaging, while the colored, opaque and trays waste PET is valorized in non-food packaging application. These waste PET must be integrated into a fully circular solution.

Rewind® PET is a PET monomer recycling solution that allows producing high quality clear and food grade PET for packaging from currently undervalued waste PET.

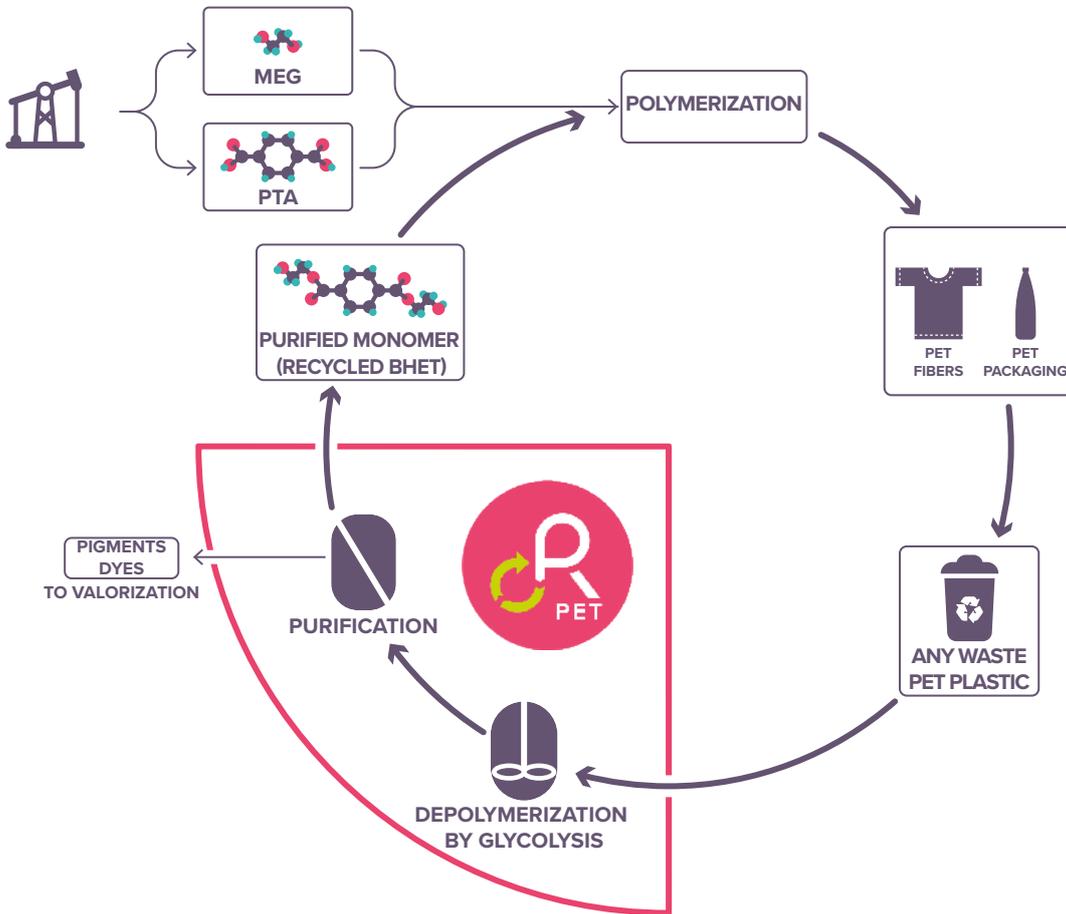
Thanks to Rewind® PET, demand for any PET plastic waste is going to rise as well as associated collection and preparation of all waste PET.

## Endlessly Recycle Waste PET into New Virgin Food Grade PET

Rewind® PET is the result of the partnership between JEPLAN, a disruptive start-up in circular economy, IFPEN, a recognized R&D center and Axens as a licensor & engineering company.

This smart upcycling process combines economic and energy efficiency solutions with strong benefits on environmental impacts demonstrated by a LCA.

The Rewind® PET preferred feedstocks are currently poorly valorized colored and opaque PET bottles and trays. Moreover, Rewind® PET is unlocking the recycling of PET films, multi layers trays and fibers (clothes, carpets, ...) into virgin food grade PET.



### Process Principle

Rewind® PET is a combination of an optimized and widely proven PET depolymerization step based on glycolysis with an additional step of purification in order to remove all organic and inorganic compounds such as pigments, dyes or other additives present in waste PET.

The result is a purified BHET (Bis (2-Hydroxyethyl) terephthalate) monomer ready to produce a new virgin PET compatible with food grade application.

Rewind® PET technology can be integrated either in an existing or in a new PET resin production plant. The amount of recycled material included in the rPET product is adjustable up to 100% depending on market demand.

↑ Rewind® PET upcycling loop



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