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Recycling PET Trays

Tray recycling: A recycling company perspective

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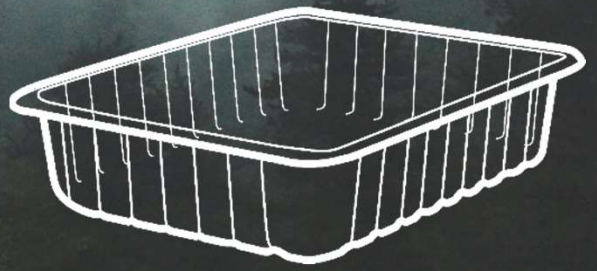

Wait… Do you recycle PET, but PET trays?

- Yes, PET trays can be recycled.
- Yes, we (and other companies) recycle both monolayer trays and multilayer trays.
- Yes, there are guidelines (and common sense) to help when designing a PET tray.
- Yes, there are several EPR sorting PET trays.

And…

- Yes, there are companies that make sheets with recycled trays.

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Pros and cons of PET

- Cons: it’s a plastic material.
- PET is the only material recognized to be recycled and safe to be use in direct contact with food (EFSA).

EUROPEAN FOOD SAFETY AUTHORITY

- It’s a safe material with excellent mechanical properties to be used for thermoforms, and also, excellent optical properties and (limited) barrier properties.

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Packaging solutions based on PET. Monolayer vs Multilayer

PLASTIC IS RESPONSIBLE FOR LESS THAN 10% OF THE LIFE CYCLE EMISSION OF THE PACKED GOOD (Kan, M., Miller, S. A., 2022)

- **Monolayer trays** could be the best solution for many applications.
- **Multilayer trays** offer higher barrier solutions and sealability.
- Both solutions coexist in the market (60/40).
- **Multilayer trays** combine the best properties of different polymers to preserve food and other goods.

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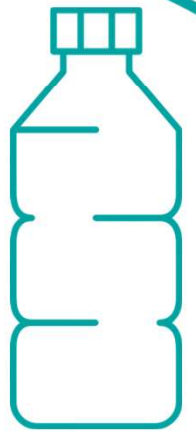
Recyclability of trays, an emerging market

- **PET market:** 3,6MT of bottles vs 1,1 MT trays.
- Bottles should contain at least 25% recycled plastic in their manufacture by 2025 (for PET bottles), and 30% by 2030 (for all bottles).
- 2030: 25% for contact sensitive plastic packaging like food wraps (50% as of 2040).
- **We don’t recycle enough PET bottles for B-to-B.**
- **We must recycle trays for Tray circularity.**



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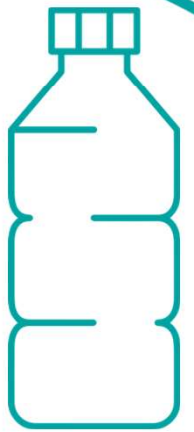
Recyclability of trays, an emerging market

- During 2022 Sulayr had recycled 22kTon of Postconsumer waste from different EPR.
- We are working to reach to 30 kTon/year in 2023.

	2022	**2023 Jan-Jun**	2023 est.
ECOEMBES	17.249.278	8.300.547	18.587.114
CITEO	2.943.700	2.616.960	5.860.064
FOST PLUS	1.632.780	1.380.560	3.110.521
COREPLA	195.830	-	1.000.000
Total	**22.021.588**	**12.298.067**	**28.557.699**



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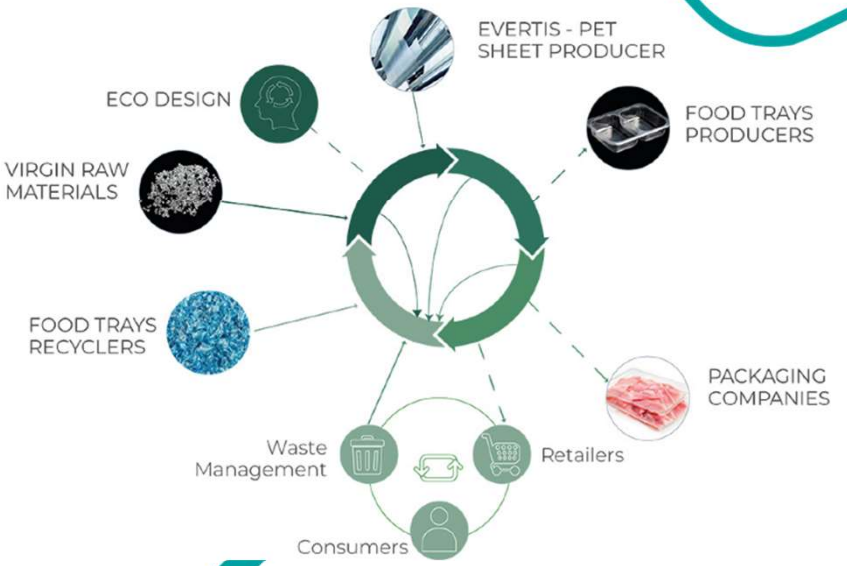
Recyclability of trays, an emerging market

- Sheet manufacturing companies are the real pioneer using recycled flakes.
- There is a strong demand for recycled tray flake.
- Mayor companies (KP, Evertis, AMB, Südpack…) support tray recycling projects and increase their use of recycled tray flakes.



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Challenges for PET tray recycling

- **Communication:** people are unaware of tray recycling.
- **Collection** (availability of PET tray bales).
- **Sorting** (availability of Good quality tray bales).
- EPR decisions (all polyester in the same bale!!!
- Old acquaintances: Color/PVC/PVDC…PS.
- And new “green solutions” (Paper/Plastic packaging).
- Cheap cost of incineration/landfill.

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Integration Mechanical & Chemical recycling

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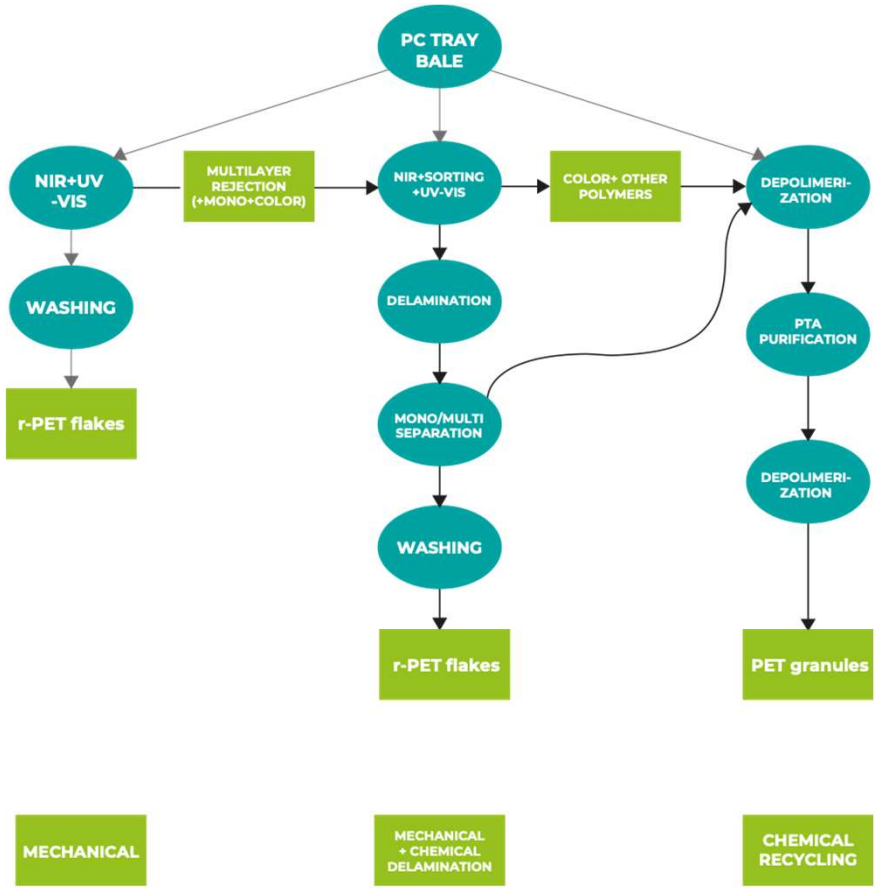
- **Mechanical:** Clear monolayer trays.
- **Mechanical+Delamination:** Clear monolayer and multilayer trays.
- **Chemical:** textiles/ films / color trays and multilayer lidding films.
- Also: Multilayer films below 200 microns and by-products from recyclers.



Enviromental impact of pc-tray recycling

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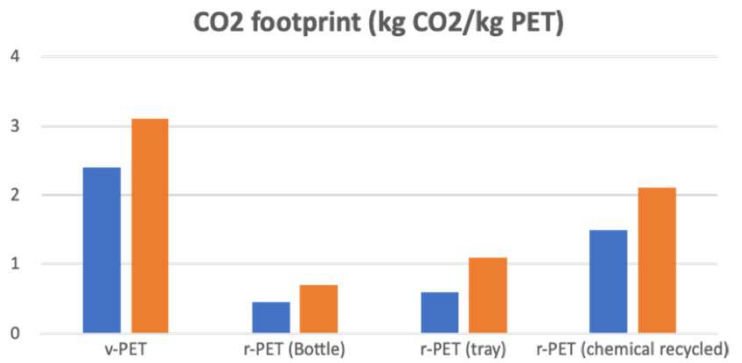
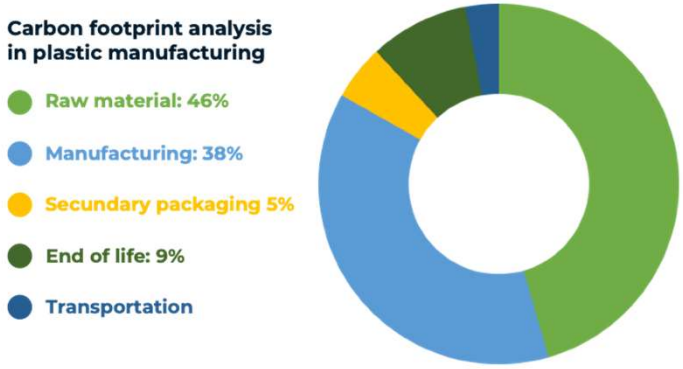
- R-PET contributes to reduce resource depletion and to avoid GHG emissions.
- Collection, transportation, pre-treatment and the process itself will define the carbon footprint of the final product.
- Raw materials production and manufacturing contribute to more than 80% of plastic packaging foodprint.





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There is a long way and we have to work together

- **Standarization:** DfR for Mono/Multi/color trays
- **Integration** of mechanical recycling and chemical recycling
- **Recycling:** development specific processes for trays
- **Collection/Sorting:** technique or socioeconomics driven decisions
- **STOP GREENWASHING**
- CBAM will indirectly affect plastic industry. Define a strategy

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Conclusions

- PET tray recycling is a great opportunity
- PET trays can be recycled
- The demand of PET flake is expected to grow
- Mechanical recycling of trays is a proven solution and chemical recycling offer a posible solution for the hard to recycle PET-based materials
- We need to keep improving collection and sorting
- All the value chain is working to achieve EU plastic strategy goals

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