In the extrusion industry, **ECOlogical** can be **ECOnomically** viable.

**How?**

Through
- Technology
- Collaboration
- Ongoing research & innovation
- Customer oriented approach

How to make it profitable?

In the extrusion industry, **ECOlogical** can be **ECOnomically** viable.

**SUSTAINABILITY**

is not only a word, it is a call to action

**Let’s build NOW our common future.**
Polyolefin up-cycling process

Post-industrial and/or post-consumer wastes find their virtuous stream.

Differently from the existing recycling/pelletizing equipment currently available in the market, the definitive goal of Bandera technology is the ability to provide a recycled polymer having quality and pureness comparable to the virgin resin, sometime even including special features as mineral fillers or fibres inclusion.

Comparison table

<table>
<thead>
<tr>
<th>Feature</th>
<th>Single screw extrusion</th>
<th>Twin screw extrusion</th>
<th>Twin screw cascade</th>
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<tr>
<td>Degassing efficacy (molten state purification)</td>
<td>■</td>
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<tr>
<td>Odour extraction</td>
<td>■</td>
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<tr>
<td>Filtration capacity (mechanical decontamination)</td>
<td>■</td>
<td>■ ■ ■ ■ ■ ■</td>
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<tr>
<td>Homogenization skills</td>
<td>■</td>
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<tr>
<td>Polymer stress factor (shear, pressure, temperature)</td>
<td>■</td>
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<tr>
<td>Compounding ability (dispersion of additives, mineral fillers, fibres, ...)</td>
<td>■ ■ ■ ■ ■ ■</td>
<td>■ ■ ■ ■ ■ ■</td>
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<tr>
<td>Throughput achievable</td>
<td>■</td>
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<td>Self-cleaning features (switch-over time saving)</td>
<td>■ ■ ■ ■ ■ ■</td>
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<tr>
<td>Energy efficiency</td>
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<td>■ ■ ■ ■ ■ ■</td>
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<tr>
<td>Overall flexibility</td>
<td>■</td>
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</table>

Polyolefin up-cycling process

The evident limits attributed to single screw extrusion technologies cannot reach the new targets specified by Circular Economy guidelines.

Twin screw benefits

Depending on the raw material features (type and level of contamination, particle dimensions, polymer heterogeneity, etc.) and the final product performances, Bandera proposes customized solutions based on its hi-tech twin screw extrusion.
the only real PET dry-less extrusion technology
the most versatile solution for current and future customers’ needs
the utmost cost-effective solution delivering significant profit results

For the satisfaction of the PET rigid film demand linked to food packaging industries (thermoforming & F.F.S.), the combination of PUR® and HVTSE® represents the market-leading solution for PERFORMANCE & PROFITABILITY.

PUR® is a highly effective solid state purification system for PET post-consumer material, fully complying with FDA and EFSA cleaning efficiency requirements.
Bandera R&D and Tech depts. created an outstanding machinery, securing
use of 100% recycled material for food packaging application
rational process for easy-to-run condition
energy consumption: 0.08 kWh/kg (35% less than alternative equipment, great annual saving)
long lasting components for cost effective maintenance
modular setup for customized and user friendly installation
Through the combination of its advanced technologies, Bandera created a prime solution to fulfill the highly demanding B-to-B market.

NO thermic & NO shear stress:
Bandera knows how to care about PET, minimizing its degradation and drops, maximizing its purification and structure.

For ensuring the highest qualities of the final product, Bandera solutions foresee both solid and molten state decontamination stages with PUR® and HVTIE® integrated technologies.

The modern legislations drive the recycling organizations to create a constructive post-consumer stream (parallel to the PET bottles one) where all PET trays is to be circularly re-used for the production of PET trays.

In order to get a real industrial setting (universally valuable and applicable), all PET trays - including the ones destined to the production of sealable food packaging - must not include other polymers generating chemical contamination (such as specific barrier resins and lamination films).

Bandera proposes an extrusion coating solution processing customizable recipes suitable for the production of “PET mono-material” trays with equivalent characteristics to the “multi-material ones” currently present in the market: seal-ability and gas barrier (where needed) are guaranteed, even with better transparency and mechanical features.

For ensuring the highest qualities of the final product, Bandera solutions foresee both solid and molten state decontamination stages with PUR® and HVTIE® integrated technologies.

The standard Bottle-to-Bottle scenario adopted by the worldwide recyclers (Flake-to-Pellet) is sometime challenged by the Flake-to-Resin option, usually requested by the producers of virgin PET material: Bandera can reliably satisfy this application as well.

The cooperation with effective partners confirmed the Recyclability of the product.

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Secured performances

- 100% recyclate to 100% recyclable
- barrier properties ensured
- fully sealable with top lid film
- transparency guaranteed
- industrial repeatability
EXPERIENCE OUR THOE
(The House of Extrusion®)

Test your material
Prove the result
Lead the market