



INNOVATIVE

# PLASTIC DESIGNS

SUSTAINABILITY FOR FUTURE GENERATIONS

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Enhancing the use of  
recycled plastic in packaging

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# Agenda

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## Enhancing the use of recycled plastic in packaging

- About Industrium
- Recyclable vs. Recycled
- Streams of Recyclable Plastic
- Types of Cycles
- The challenges associated with the use of Recyclable and Recycled Plastic
- Various solutions: Reusing, Mixing, Sandwiching...
- Collaboration: Multi-use and/or Cluster Collaboration



# About Industrium



- Plastic Converter focused on Packaging:
  - Food Packaging
  - Agro and farming Packaging
  - Transportation Packaging
- Part of a brand owner group: NFPC (Lacnor, Oasis, Milco, etc..)
- 40+ years in business
- Based in the UAE
- Three production sites, including one dedicated for recycling
- Triple-R is in our DNA



# Recyclable vs. Recycled

- Recyclable:
  - Plastic which **can be** converted into products if we prepare it for that.
- Recycled:
  - Plastic which is **ready** to be converted into products.

The current economical challenge:

Abundance of Recyclable  
&  
Scarcity of Recycled.



# Streams of Recyclable Plastic

- Post Industrial:
  - Scrap plastic generated from the Petrochemical process chain: compounder, converter, industrial user.
  - Efficient reuse context.
- Post Institution:
  - Plastic waste generated by institutions (Schools, Offices, Malls, Hotels, etc..) and collected by FM operators.
  - Efficient reuse context.
- Post Consumer:
  - Plastic waste generated by end-consumer
  - The biggest stream and the most inefficient context.



# Types of Cycles.

- Up-Cycling:
  - Plastic coming from a “sophisticated” product and reused to produce a more “sophisticated” product.
  - Extremely rare
- Re-Cycling:
  - Plastic coming from a product and reused to produce the same product.
- De-Cycling: (or Down-Cycling)
  - Plastic coming from a “sophisticated” product and reused to produce a less “sophisticated” product.
  - The most common cycling practice.
- End-Cycling:
  - Plastic exiting the cycle (ex: Waste to Energy)



# The challenges associated with the use of Recyclable and Recycled Plastic

INDUSTRIMUM

- Contextual Challenges
  - Availability of Consistent, Reliable and Economical Feed-Stream
  - Cross-border shipping of Recyclable Plastic (and in some cases Recycled Plastic)
- Operational Challenges
  - Segregation
  - Contamination
  - Size Reduction
- Business Challenges
  - Suitability
  - Consumer Acceptance



# Various Solutions: Reusing, Mixing, Sandwiching...

- All Three solutions are challenging, each in its own way:
  - Reusing
    - Producing a product using only Recycled Plastic
  - Mixing
    - Producing a product using a Mix of Virgin Plastic and Recycled Plastic
  - Sandwiching
    - Cover the Recycled Plastic with layers of Virgin Plastic





# Collaboration: Multi-use and/or Cluster Collaboration



- By its very nature, the recycling challenge is multi-party with no identified owner. Hence, the only way to achieve an effective and efficient solution is through multi-party collaboration.
- Industrium has previously presented a Multi-use solution to the GPCA members around the Plastic Pallet. This mainly addresses the “Reuse” in the Triple-R approach.
- Industrium is also open to engage with discussions around a Cluster Collaboration to address the availability of Feed-Stream of Recyclable Plastic, which is biggest challenge in the “Recycle” element of the Triple-R approach.



# Take-away thoughts

- If Recycling is not profitable, it will remain a business burden rather than a business opportunity.
- To make Recycling profitable, we need to:
  - Establish a steady stream of recyclables, which can only be done through collaboration.
  - Establish efficiency in the feed stream, through up-stream segregation and up-stream size reduction.
  - Establish professional recycling plants. Industrium is absolutely open to discussions around this topic with serious parties.
  - Be smart about the conversion of recycled plastic to suitable & fit-for-purpose plastic products.





**THANK  
YOU**

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