THE TRANSITION TOWARDS A CIRCULAR ECONOMY: A CASE FOR PLASTICS

CONFRONTATIONS EUROPE SEMINAR
10 February 2017
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Resourcing the World
Leading the Circular Economy, our services encourage the efficient use of water, waste and energy resources.

DEVELOPING ACCESS TO RESOURCES:
Veolia offers operational solutions that consume fewer environmental resources and are more economically efficient, so as to expand both the potential and the accessibility of the resources available.

PRESERVING RESOURCES:
Veolia develops solutions to conserve resources and optimize their use, while protecting their quality and efficiency throughout the usage cycle.

REPLENISHING RESOURCES:
Veolia provides solutions for creating new “secondary” resources that will gradually offset the increasing scarcity of natural “primary” resources, generating new opportunities for social and economic development that protect the environment.
PLASTICS: AN INTEGRAL AND IMPORTANT PART OF THE GLOBAL ECONOMY

Multiple Benefits of Plastics
✓ Weight Reduction
✓ High Reliability
✓ Superior Wear Resistance
✓ Chemical & Corrosion Resistance
✓ Increased Service Life
✓ No Product Contamination
✓ Noise Reduction
✓ Flexibility
✓ Ease of Machining
✓ …

PLASTICS PRODUCTION INCREASED TWENTY-FOLD OVER THE LAST 50 YEARS

MILLION TONNES

0 50 100 150 200 250 300 350


15 MT (1964)

20x

301 MT (2014)


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CHALLENGES - PLASTICS RECYCLING

- Immature end-markets
- Insecure Feedstocks
- Insufficient collection capacity
- Increasing complexity of polymers / additives
- Inadequate / split incentives
- Technological innovation
- Volatile Oil prices
- Lack of Data / Information
TODAY, PLASTIC PACKAGING MATERIAL FLOWS ARE LARGELY LINEAR

- 8% Cascaded Recycling¹
- 4% Process Losses
- 14% Collected For Recycling
- 2% Closed-Loop Recycling²
- 98% Virgin Feedstock
- 78 Million Tonnes (Annual Production)
- 14% Incineration and/or Energy Recovery
- 32% Leakage
- 40% Landfilled

¹ Cascaded recycling: Recycling of plastics into the same or similar quality application
² Closed-loop recycling: Recycling of waste into new, lower-value applications

Source: Project Reframe analysis - for details please refer to the extended version of the report available on the website of the Ellen MacArthur Foundation: www.ellenmacarthurfoundation.org
NEW PLASTICS ECONOMY INITIATIVE – REPORT

Three strategies to transform the global plastic packaging market

FUNDAMENTAL REDESIGN & INNOVATION

REUSE

30%  20%

50%

RECYCLING WITH RADICALLY IMPROVED ECONOMICS & QUALITY

World Economic Forum and Ellen MacArthur Foundation
« BOTTLE TO BOTTLE »
RECYCLING PROCESS (PET)

Technical Materials

- 1 billion bottles recycled each year
- 31,000 metric tonnes of petroleum saved
- 113,000 metric tonnes of CO2 equivalent avoided each year

Rostock, Germany
Veolia’s solution

- Customized manufacturing of high quality, recycled, polypropylene (PP) granulates

- Advanced sorting of PP(1) and PE(2) (Liquisort®) and reformulation (granulation, mixes, extrusion) of high-quality resins (~40kt/year)

- Customer applications of products notably include horticultural, infrastructure, electronic appliances, automotive and packaging products.

- With a state-of-the-art equipped laboratory, providing comprehensive analysis in each stage of the production process, in combination with highly developed formulation skills, as well as advanced currently developed separation technologies ...

- The Vroomshoop facility will be the cornerstone for the expansion of Veolia’s European platform of recycled raw plastic materials manufacturing.
**Veolia's solution**

- Veolia acquired the assets of Euro Closed Loop Recycling – the HDPE milk bottle recycling business in East London (under former ownership, closed its doors in late summer 2015).
- Veolia will recycle 200 million plastic milk bottles and produce 10,000 tonnes of high quality food-grade HDPE pellets, per year.
- Veolia will offer the complete range of services from collection of raw feedstock (waste plastic bottles) direct from people’s homes or businesses, through all the recycling steps, and back to food grade pellets ready to be blown into new plastic milk bottles.
- The move will boost the UK’s domestic recycling capability and create 30 permanent jobs.
VEOLIA KEY RECOMMENDATIONS ON THE CIRCULAR ECONOMY PACKAGE

- Extension of the scope to C&I waste
- Full harmonisation of the legislation & the calculation method
- Complementarity of waste treatment alternatives
- Improvement of the design of products
- Exploitation of energy of waste
- A boost to SRM markets
Recommendation No.1

Foreseeing the inclusion of non-hazardous commercial and industrial waste in the directives.
Ensure a **full and harmonized implementation of the EU regulations** that will be supported by the alignment of the definitions among EU waste related texts and by putting in place a **single calculation method** to calculate recycling rates based on the “**output from the sorting centres**”
Improvements in the design of products have the greatest potential to revolutionize resource management. Appropriate Extended Producer Responsibility (EPR) schemes have a key role to play.
Recommendation No. 4

Incentives are needed to enhance recycling and the development of a market for secondary raw materials (SRM). End of waste should be better framed by the Commission.
• Significant Drop in Oil Prices since July 2014
• Prices of Virgin Resins (typically) Correlated to Crude Oil Prices
Recycled plastic prices are not determined by production costs but are defined by virgin prices at the top end and plastic waste supply and recycled plastic demand at the bottom end.
THE NEW PLASTICS ECONOMY

Keys to Success:
- Innovation
- Collaboration
- Education
- Regulatory Enablers

1. Create an effective after-use plastics economy
2. Decouple plastics from fossil feedstocks
3. Recycle, radically improved economics & quality
4. Design & production
5. Use
6. Reuse
7. Energy recovery
8. Other material streams

RENEWABLY SOURCED VIRGIN FEEDSTOCK

1. Anaerobic digestion
2. The role of end-of-life conditions for energy recovery in the New Plastics Economy needs to be further investigated.
Source: Project Markham analysis
THANK YOU FOR YOUR ATTENTION!