What’s going on with Plastic Recycling?

Maryland Recycling Conference
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Sandi Childs, Film & Flexibles Program Director
APR:  
The Voice of Plastics Recycling™
Increase Supply
Enhance Quality
Expand Demand
Communicate Value

APR Primary Goals
• APR believes that *functional, attractive, and economical* plastic products can be designed that are also *fully compatible* with material recovery and plastics reclamation systems.

• APR Key Programs:
  – Design® Guide for Plastics Recyclability
  – Demand Champions Campaign
  – Support for Stakeholder Initiatives
    • TRP
    • MRFF
    • NEMO
    • WRAP
Crossroads

• Brand owner sustainability commitments
  – Every package will be recyclable
  – Packages will contain postconsumer recycled content

• Brand owner package innovation
  – More flexible pouches replacing rigid containers
  – Higher performance characteristics
Impact

• Unprecedented need for high-quality PCR

• Unprecedented need for markets for low-quality bales
Is it Supply or Demand?

- High-value established materials:
  - “Brand Love” – the intersection of marketing and virtue
  - Circularity is the holy grail
  - Quality material at parity cost is the goal

- Low-value new materials:
  - What is the “virtue” proposition?
    - Reducing food waste
    - Reducing resource use in manufacturing, transportation
    - Takes up much less landfill space
    - Can a plastic package be “too good to recycle”?
  - What is the value proposition?
Key Focus Areas

• Supply development for established high-demand plastics
  – PET Bottles
  – HDPE Milk Jugs
  – HDPE Mixed Color

• Market development for emerging materials
  – Multi-layer laminated pouches; “Hybrid” packages
  – Sort for Value
  – What is circularity?
  – What are the roles for chemical recycling (“Transformational Technologies”), combustion or pyrolysis for fuel, product substitutions?
Two Initiatives: MRFF and Demand Champions
FIRST PROGRAM IN THE NATION

Launching the first large-scale opportunity to collect flexible packaging loose in curbside bins — the same way other packages get recycled.
12 billion lbs of light weight flexible packaging generated annually in the US (resealable pouches, snack bags and overwraps)

- Twice the size of the PET market. $31B in sales, 19% of packaging industry (FPA, 2017)

- Potentially valuable, relatively untapped source of post-consumer resin for manufacturing applications

How do we get it back?
2019 MRF PILOT: TOTAL RECYCLE, BERKS COUNTY PA

- Owner J.P. Mascaro & Sons, 4th generation family owned business
- Large high speed MRF 700 TPD single stream in growth mode
- Adding capabilities to produce an est. 3100 tons of rFlex annually
- Fully integrated; has extensive hauling operation in area covering 9 counties with 90 municipalities under contract.
- Also owns a landfill and transfer stations in region.

http://www.wastetodaymagazine.com/article/jp-mascaro-sons-built-to-last/
• RRS developed Pro Forma Model for Adding Flexible Packaging to evaluate MRFs for a capital cost grant to pilot
• Model results highly dependent on local conditions – high tip fees favorably impact net system cost, revenue per ton modeled conservatively given flux in markets
• Net impact on processing cost $2/ton, on par with addition of other materials to single stream
WORKING END MARKETS IN PARALLEL WITH BALE PRODUCTION

2015

POST-COMMERCIAL
(989 M lbs.)

POST-CONSUMER
(209 M lbs.)

Retail bags &
films and MRF
curb side film

Pilot & 10yr Projection

No fiber
SORTING
WASHING
SHREDDING

PE only
WASHING
SHREDDING

No fiber
SORTING
WASHING
PELLETIZING
SHREDDING

Film/Sheet
Lumber/ Extruded
profiles
Durable Products,
Intermediates - pellets
(Testing w EcoStrate, Ultra
Poly, Zzyzx, EREMA, etc.)
Pyrolysis
Engineered Fuel Pellets
Cement Kilns
Building Products
(testing w ReWall, JET,
etc.)

6 M lbs/yr

https://plastics.americanchemistry.com/2015-National-Post-
END MARKET WORK FOCUSED ON LOCAL CIRCULAR ECONOMY

• Continuus Materials (acquired ReWall) wallboard and roof system elements
  • Current plant in Des Moines, IA
  • Expansion plans – 2 additional facilities, one in PA
  • Successfully tested theoretical rFlex bale
• Expert, well-established plastic recyclers testing in PA – UltraPoly, Ecostrate, Zzyzx plus others with variety of potential end uses for pellets
• Additional rFlex performance tests scheduled for 2019
• Engage PA Recycling Markets Center as innovation hub
If you are not buying or using PCR, you are unnecessarily using a dwindling natural resource and contributing to pollution.
• The positive impact of exerting “demand pull” for products made with PCR

*Increased volume of product sold raises productivity*

*Higher productivity can drive technology investment*

*Technology investment can improve quality and reduce costs for finished goods*

*Better quality finished goods at competitive price spurs sales*
2018 APR RECYCLING DEMAND CHAMPIONS YEAR END REPORT

Consistent, reliable demand is critical for recycling to be mature, vibrant and sustainable

THE INAUGURAL DEMAND CHAMPIONS

- Berry
- Champion
- Clean Tech Incorporated
- Coca-Cola
- Envision Plastics
- Keurig DrPepper
- Merlin Plastics
- Plastipak Packaging Inc.
- P&G
- Target

INCREASED THEIR PCR PURCHASING OVER THE LAST 12 MONTHS BY:

6.8 MILLION POUNDS OF POSTCONSUMER RESINS

PCR USES INCLUDE:
- LDPE
- PET
- PP
- HDPE

RESULTING IN THESE ESTIMATED IMPACTS

- GREENHOUSE GAS EMISSIONS FROM 1,747 PASSENGER VEHICLES DRIVEN FOR 1 YEAR

- JOB CREATION IN PLASTIC RECYCLING FOR 92 PEOPLE

- ALL THE PLASTIC RECYCLABLES FROM A CITY THE SIZE OF CAMBRIDGE, MASSACHUSETTS (113,333 POPULATION)

THE APR DEMAND CHAMPIONS - STRENGTHENING AND INCREASING DOMESTIC DEMAND FOR RESIDENTIAL MIXED PLASTICS

Data sources:
* EPA WARM Model
**Private consultants/industry experts
***The Recycling Partnership
Stay in Touch!

Sandi Childs
Director, Film & Flexibles and Design® Guide Manager
sandi@plasticsrecycling.org
(678) 474-6008