



Patty Moore, Moore Recycling Associates Inc

PLASTIC MARKET UPDATE



OVERVIEW

China

PET Packaging

HDPE Bottles

Foam

Non-Bottle Rigid Plastic

Film & Bags



Green Fence: March 2014



PET

- Demand outpaces supply: US reclamation capacity growing
- Bale quality is (was?) dropping: ability to enforce bale specifications?
- Thermoforms may provide relief: issues need addressing
 - ✧ Look-alike containers
 - ✧ Size, shape
 - ✧ Labels, inks, glues



HDPE Bottles

- Potential supply dropping
- Supply demand in balance
- Fracking may lead to abundant natural gas and a drop in value

| | Resin Sales M lbs | Bottles Recycled M lbs | Recycling Rate |
|------|----------------------|---------------------------|----------------|
| 2006 | 3510 | 928 | 26.4% |
| 2007 | 3540 | 921 | 26.0% |
| 2008 | 3236 | 937 | 29.0% |
| 2009 | 3365 | 982 | 29.2% |
| 2010 | 3286 | 984 | 29.9% |
| 2011 | 3261 | 974 | 29.9% |
| 2012 | 3229 | 1019 | 31.6% |



Foam

- Domestic markets exist primarily for EPS, some PU
- Collection is key: high volume, commercial or special collection
- EPS may work curbside: clear, easily identifiable

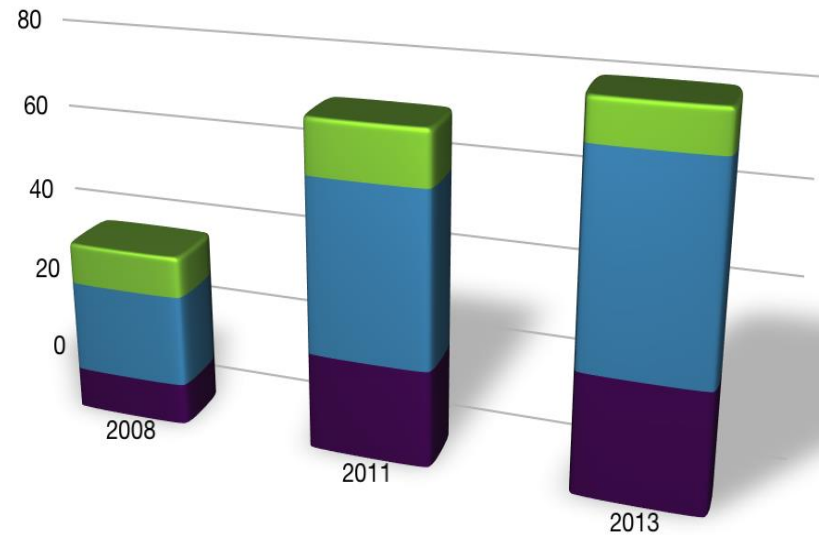


Non-Bottle Rigid Plastic

- Collection growing
- Urgent need to expand domestic sortation and reclamation

Unknown efficacy and economics of “PRF” operations

100 Most Populous Cities: Plastic Collection Programs



■ All Bottles ■ Bottles & Containers ■ All Rigid Plastic



Non-Bottle Rigid Plastic

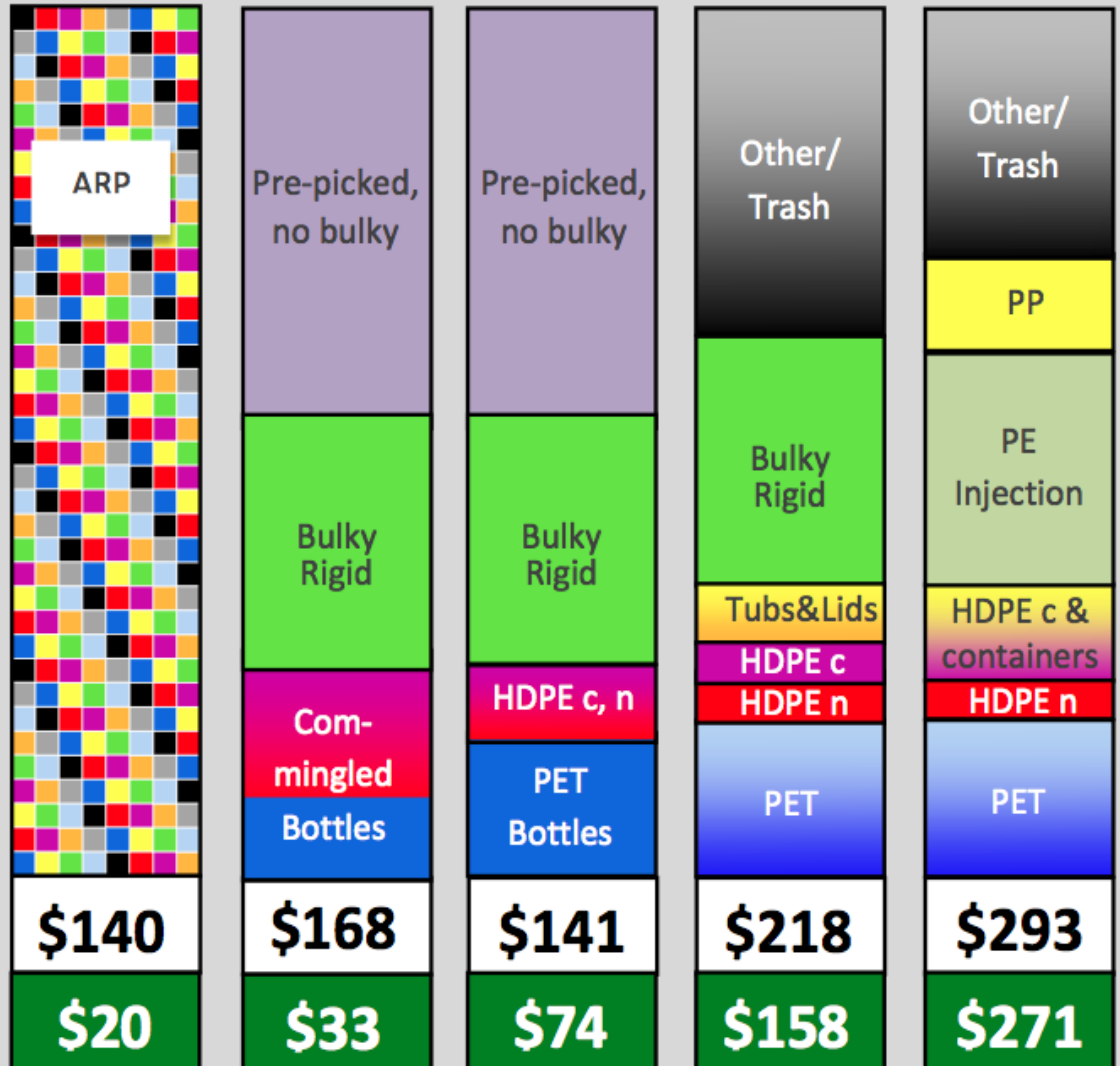
- Domestic markets exist:
primarily for olefin plastic [PE – PP]
- Unknown depth of demand and lack of realistic specifications for non-bottle PCR
- Need converter modifications



SORT FOR VALUE

Increasing degree of separation →

| Material | % in bale |
|-----------------|-----------|
| PET Bottles | 16 |
| HDPE N Bottles | 3.51 |
| HDPE C Bottles | 4.22 |
| PP | 15.9 |
| Bulky | 29.9 |
| PET Thermoforms | 2 |



Total value per ton **January 2013**
per ton **May 2013**



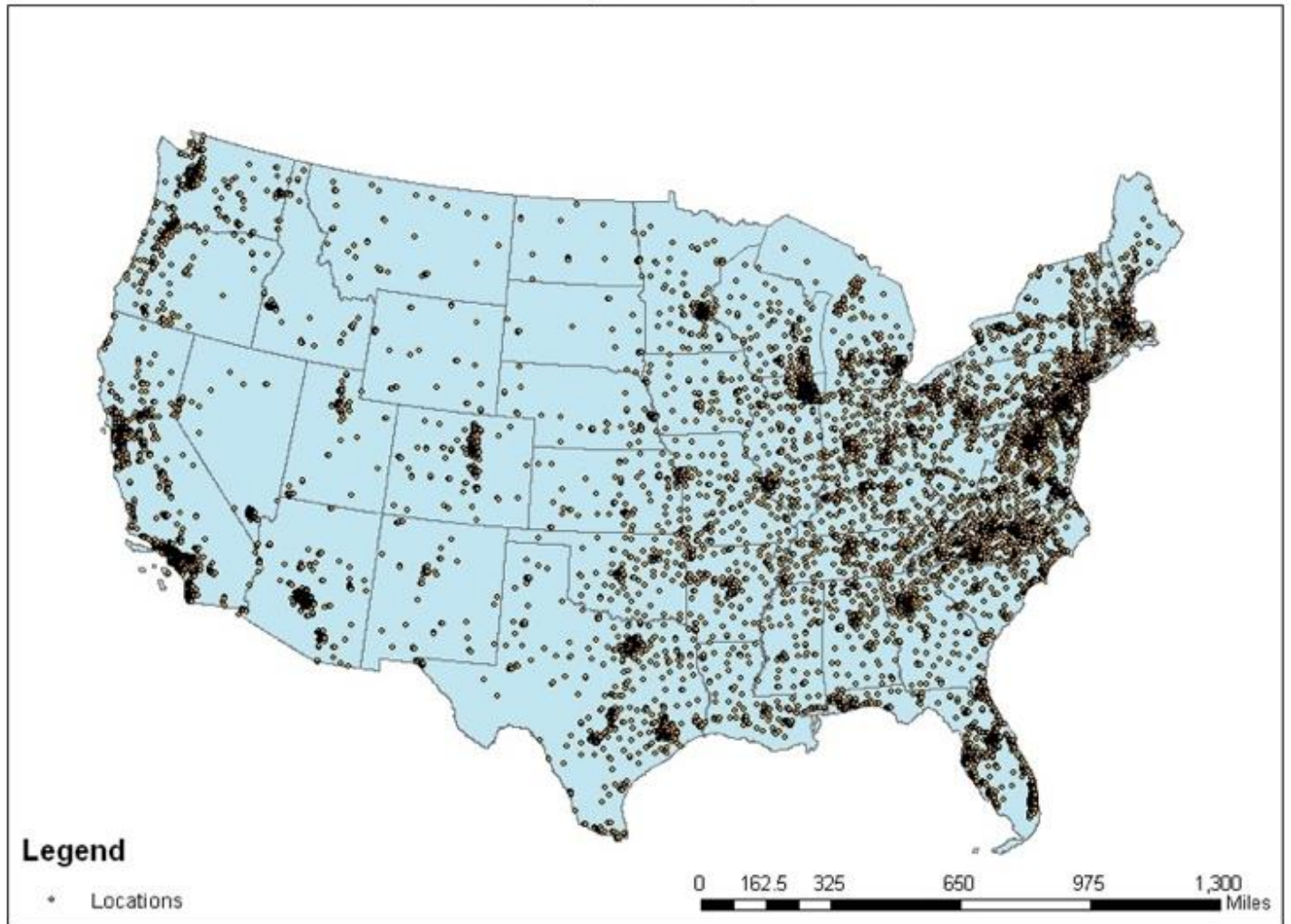
Film & Bags

- Tremendous opportunity for growth
- Discourage Curbside at this time
 - MRF Difficulties
 - Low Value
- Widespread Access to Recycling:
15,000 Drop-off Locations Nationwide
- Primarily Retail
- Commercial Collection is Key

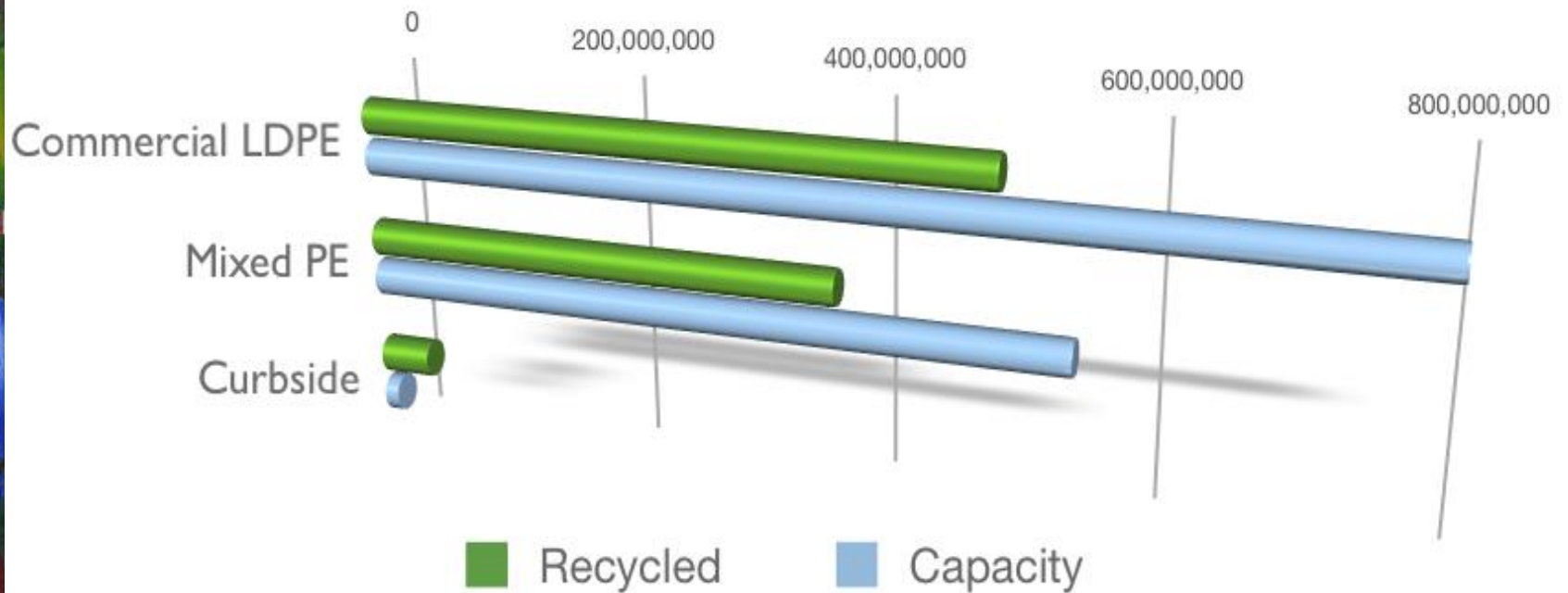


Film & Bags

United States Map of All Drop-Off Facilities



2011 North America Supply/Demand (pounds)





Trends

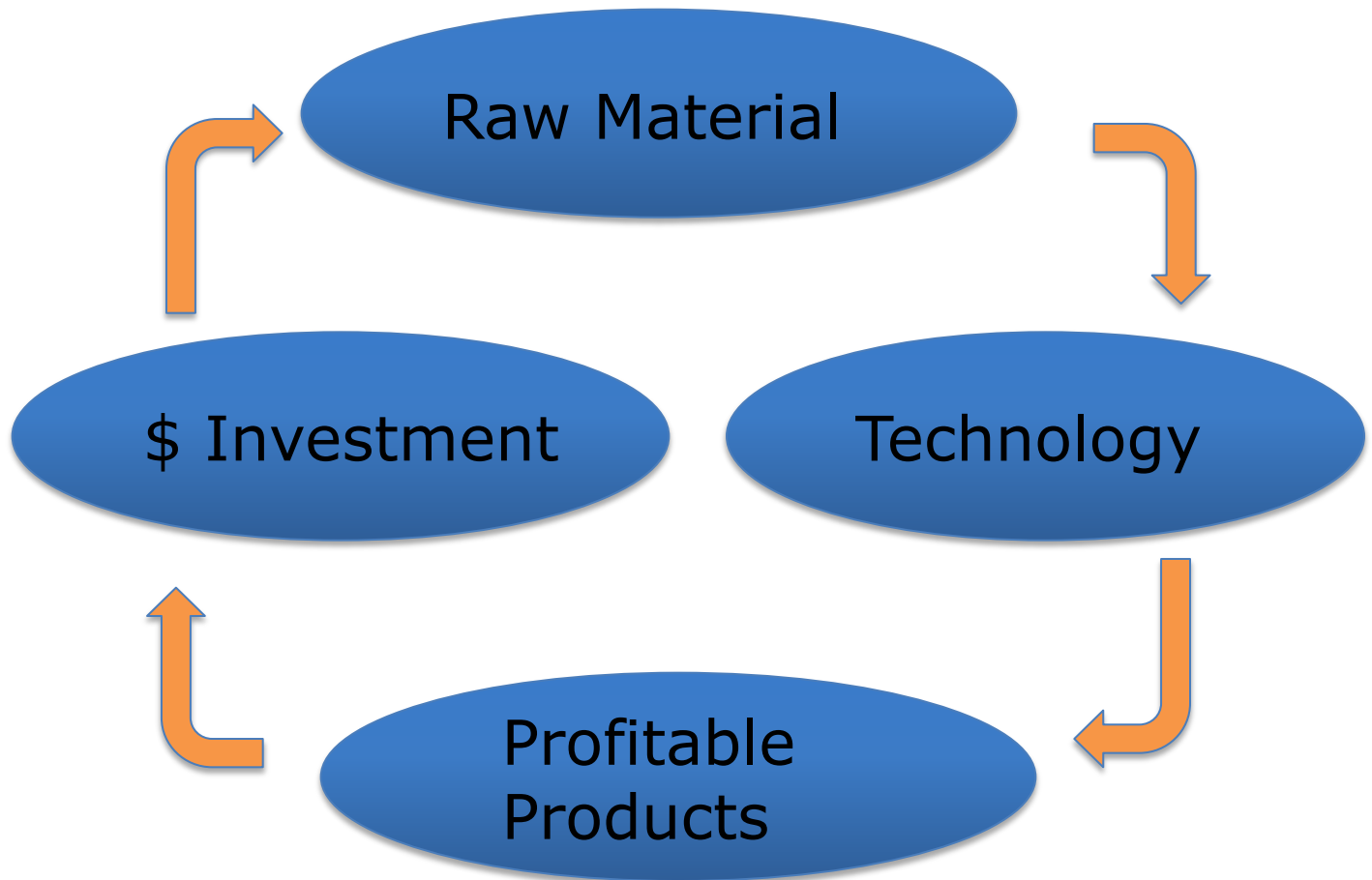
- Labels tied to Design Guidelines

How2Recycle.org





What is needed for success?





Gaps

- Most scrap plastic is sold on a spot-market basis
- Need for converter modifications to accommodate postconsumer resins, which tend to have less consistent properties



Gaps

- Incentives for MRFs to “divert” materials as inexpensively as possible coupled with their (past?) ability to export low-quality, mixed resin bales
- Lack of adherence to Design for Recyclability Guidelines



Trends

- Reduction in Paper means MRF capacity
- High value, strong demand of Plastic makes it attractive
- Increase in collection of non-bottles
- Communities are moving away from using RIC



More Trends

- Strong interest in recycled content
- Waste to Oil technology expands market potential for very specific lower value streams



The Future?





Resources

PlasticsMarkets.org

[connect suppliers and buyers of all types of scrap plastic]

PlasticFilmRecycling.org

[connect suppliers and buyers of all types of scrap plastic]

MooreRecycling.com

[Publications]

PlasticRecycling.org

[Association of PostConsumer Plastic Recyclers]

RecycleYourPlastic.org

Plastics.AmericanChemistry.com

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Questions?

Recycling Implementation Specialists



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