Mixed Waste Processing

Myles Cohen

Agenda

- **About Pratt**
  - North America
  - In New York
- **Industry Dynamics**
  - The markets
  - Relationship between paper grades
- **Mixed Waste Processing**
  - Why Quality in Paramount
  - Issues, Myths, Facts
- **Conclusions**

About Pratt

-North America

-In New York

Pratt Industries Overview

- 2+ Billion fully integrated, privately-held packaging company
- Recycle 2 million tons of recycled materials annually
  - ~30 million trees saved annually
- 5th Largest U.S. paper and packaging company – 5,100 employees
- Largest 100% Recycled corrugated packaging company in North America
- State-of-the-art Waste-to-Clean Energy Plant
- 4 – 100% Recycled Paper Mills
  - 1 of which NYC – only paper mill in NYC
  - Largest user of RESIDENTIAL mixed paper in North America
  - Mills CONSUME ~10 million pounds/day of recycled paper
- 40+ Converting plants and factories in North America
  - 2 in N.Y. (NYC and New Windsor, NY)
- 17 Material Recovery facilities (MRFs)

Pratt – Largest North America Consumer of Residential Mixed Paper (RMP)

-Process through OUR MRFs, or purchase from 3rd parties, RMP from the following cities:

New York City, NY	Atlanta, GA	Dallas, TX	Houston, TX
San Antonio, TX	Austin, TX	Fort Worth, TX	Camden, NJ
Chicago, IL	Milwaukee, WI	Akron, OH	Columbus, OH
Indianapolis, IN	Fort Wayne, IN	Kalamazoo, MI	Detroit, MI
Madison, WI	Cleveland, OH	Arlington, TX	Cincinnati, OH
Chattanooga, TN	W. Palm Beach, FL	Denton, TX	Oklahoma City, OK
Tulsa, OK	Orlando, FL	Memphis, TN	Fayetteville, NC
Savannah, GA	Shreveport, LA	Plano, TX	Raleigh, NC
Greenville, SC	Columbus, GA	Louisville, KY	Little Rock, AR
Des Moines, IA	Flint, MI	Texarkana, TX	Spartanburg, SC
Lakeland, FL	Anderson County, SC	Plus Over 75 Other Cities & Towns	

Close-the-Loop Integrated

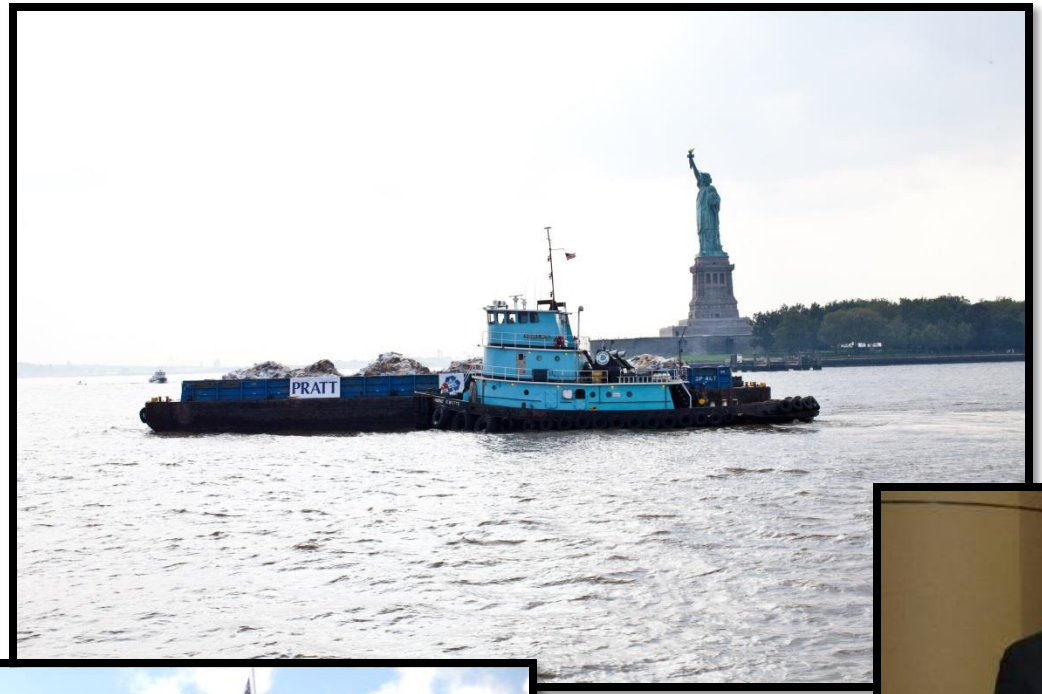
Pratt…a true "Circular Economy" company

Fully Integrated Close-the-Loop

Our Customers

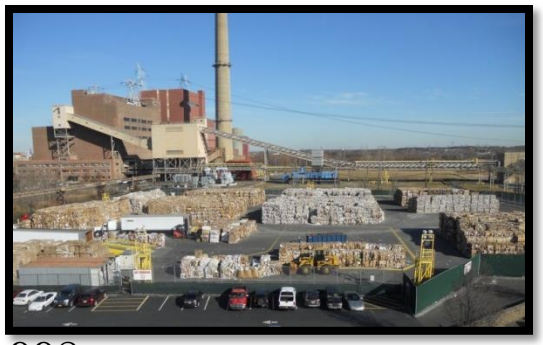
Pratt Industries is known by the companies we keep

Pratt in New York



Really…a paper mill in NYC??

Pratt in New York



- **NYC – Staten Island Mill**
  - Only paper mill in NYC
  - 100% Recycled
  - 2.5 Million pounds of paper needed PER DAY
    - Significant % from Dept. of Sanitation N.Y.
  - Has produced 6 million tons new paper (DSNY) since 1998
    - Saved 102 million trees
  - Huge NYC "Circular Economy" economic engine
- **Pratt Staten Island Box Factory**
  - Opened in 2008
- **Pratt Staten Island Recycling Division**
  - Procures 2.5 million pound of recycled paper per day
- **Total Jobs: 295 Direct + over 600 indirect**
- **Quality Carton – New Windsor, NY – Purchased company in 2012**
  - 70 employees
  - Makes boxes for L'Oréal, Tiffany, etc.

102 Million Trees Saved in Staten Island

That's an entire forest…16 times the size of Manhattan

Environmental Benefits of using only 100% Reycled Content

In New York .....EVERYDAY....PRATT SAVES!

7 Million Gallons of Water

17,000 Trees

4,000 Tons of CO_2 prevented

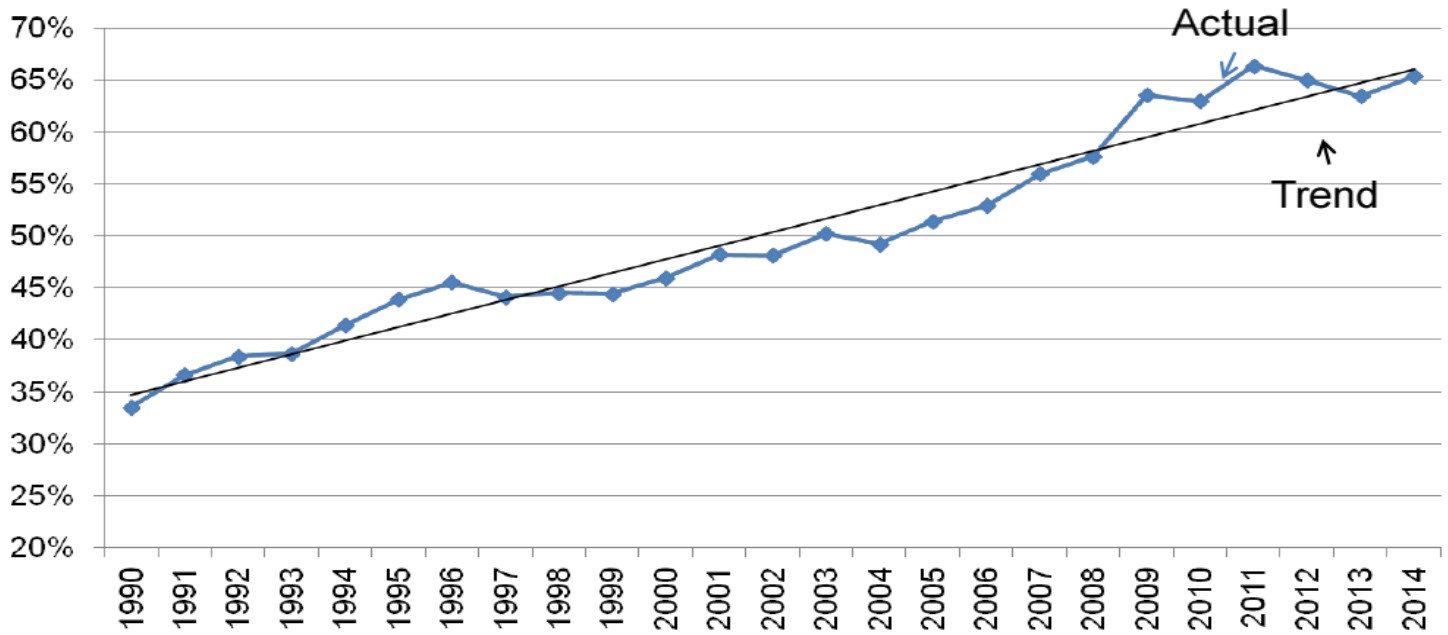
4,000,000 kilowatt hours of power saved

3,300 Cubic Yards diverted from landfills

Industry Dynamics

Historical Paper Recovery Trend

U.S. Paper Recovery Rate 1990-2014

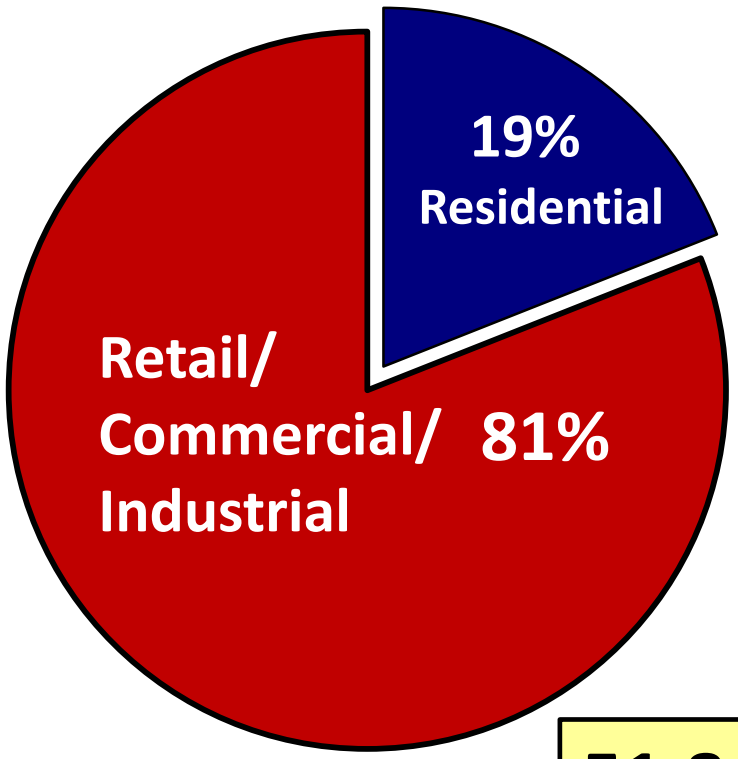


Source: AF&PA

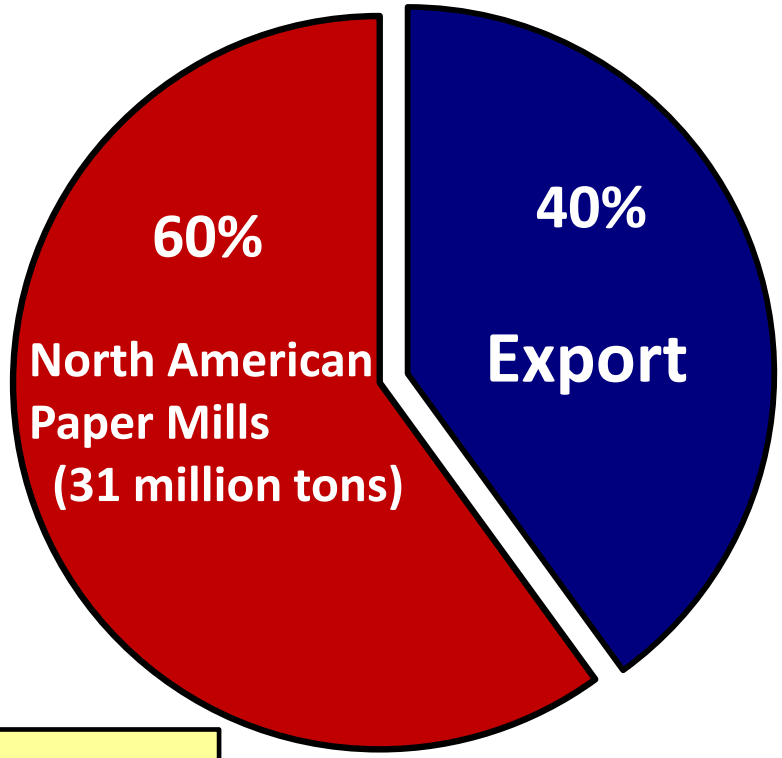
American Forest & Paper Association

North America – Recovered Fiber COLLECTIONS

WHERE IT COMES FROM

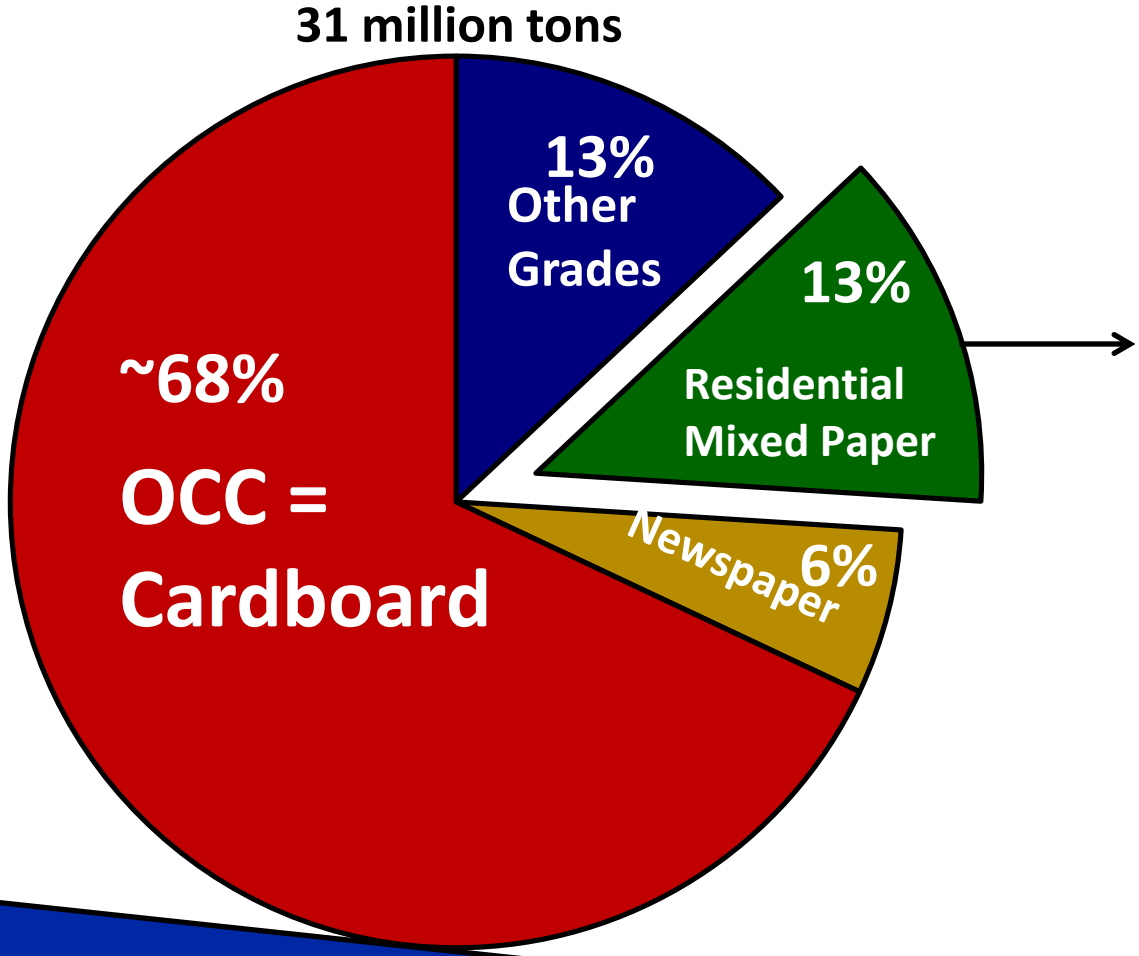


WHERE IT GOES



51.8 Million Tons

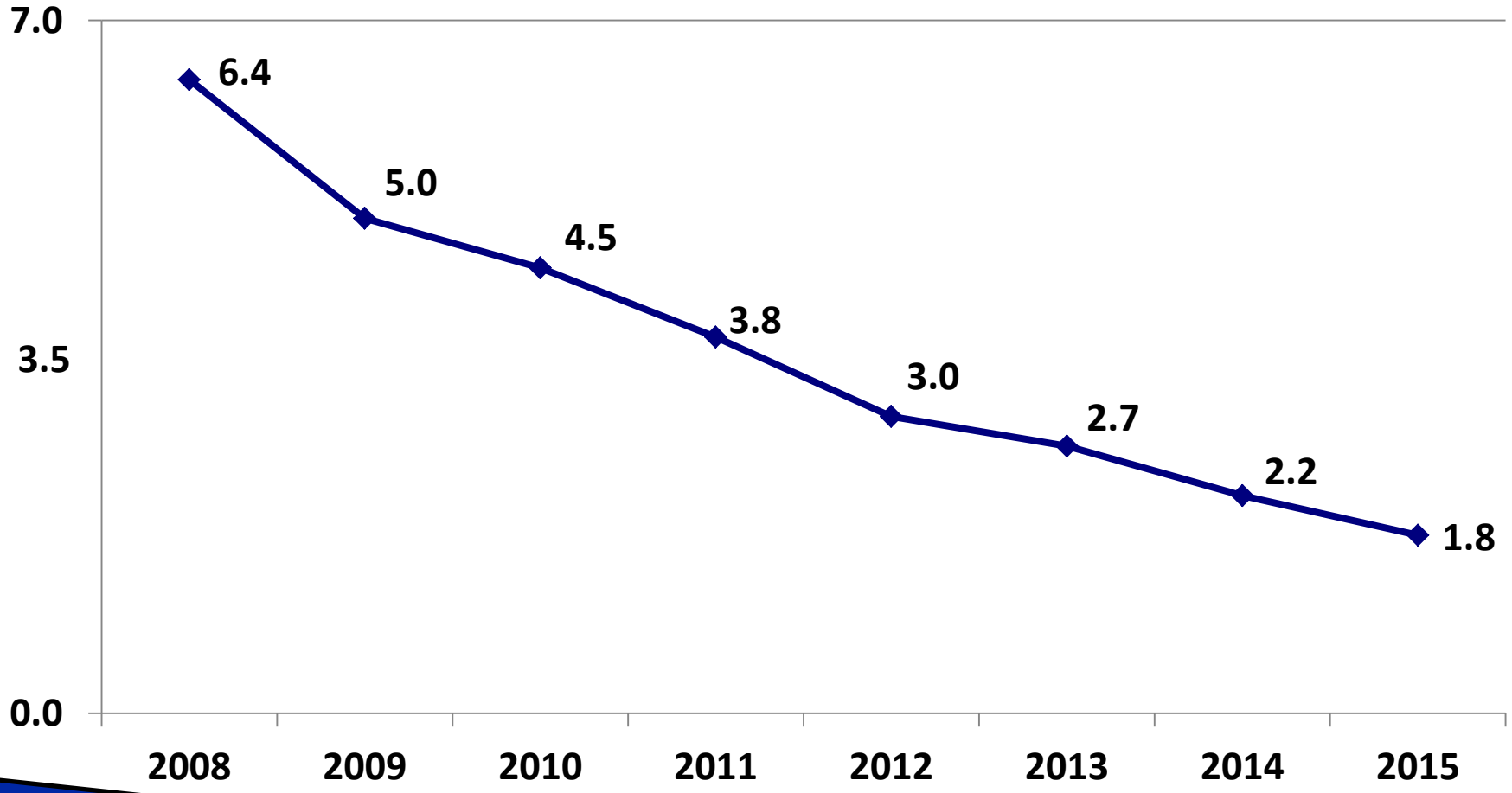
North America – Recovered Fiber Consumption



RESIDENTIAL MIXED PAPER (RMP)

- Virtually 100% from Dual-stream or single-stream MRFs
- ~4,000,000 tons RMP Consumed in N.A. year
  - Pratt = #1 mill group consuming RMP
  - 1+ million tons/year
- Pratt = Largest RMP MRF processor in N.A. amongst all paper mill groups

Old Newspaper (ONP) – It's NOT Coming Back…ever
Tons-Millions – North American Consumption



SWANA
SOLID WASTE ASSOCIATION

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DLK

OCC Domestic

OCC Asian

ONP

Mixed Paper

Dirty Mixed Paper

PRATT 100% RECYCLED

Recycling Industry Distress

- **5 Key Drivers**
  1. Export Down – mainly due to China – Green Fence
  2. "Residue" (non-recyclables) increasing – MRF cost and higher carbon footprint on MSW
  3. Low commodity prices – single stream processing now costs more than the value of the material
  4. Declining volumes – light weighting and less print media
  5. Glass

The Washington Post

washingtonpost.com Sunday, June 21, 2015 $1.25

American recycling is stalling, and the big blue bin is one reason why

By: Aaron C. Davis

Tucked in the woods 30 miles north of Washington is a plant packed with energy-guzzling machines that can make even an environmentalist's heart sing — giant conveyor belts, sorters and crushers saving a thousand tons of paper, plastic and other recyclables from reaching landfills each day. The 24-hour operation is a sign that after three decades of trying, a culture of curbside recycling has become ingrained in cities and counties across the country. Happy Valley, however, it is not.

Once a profitable business for cities and private employers alike, recycling in recent years has become a money-sucking enterprise. The District, Baltimore and many counties in between are contributing millions annually to prop up one of the nation's busiest facilities here in Elkridge, Md. — but it is still losing money. In fact, almost every facility like it in the country is running in the red. And Waste Management and other recyclers say that more than 2,000 municipalities are paying to dispose of their recyclables instead of the other way around.

In short, the business of American recycling has stalled. And industry leaders warn that the situation is worse than it appears.

"If people feel that recycling is important — and I think they do, increasingly — then we are talking about a nationwide crisis," said David Steiner, chief executive of Waste Management, the nation's largest recycler. The Houston-based company's recycling division posted a loss of nearly $16 million in the first quarter of the year. In recent months, it has shut nearly one in 10 of its biggest recycling facilities. An even larger percentage of its plants may go dark in the next 12 months, Steiner said.

The problems of recycling in America are both global and local. A storm of falling oil prices, a strong dollar and a weakened economy in China have sent prices for American recyclables plummeting worldwide.

K-6 Computer Lab oakdome.com

Waste EXPO PANEL

an event by Waste360

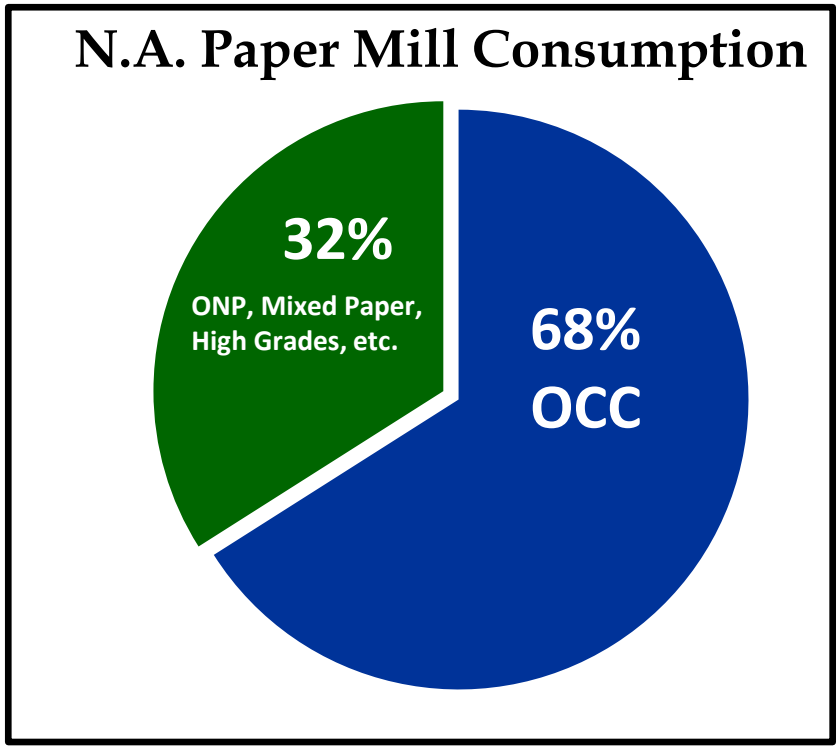
"We all screwed it up, this is a crisis."

-David Steiner
WM /CEO

Global Paper Mill Requirements- Clean, Contaminant Free Recovered Fiber

~ 20 Million Tons

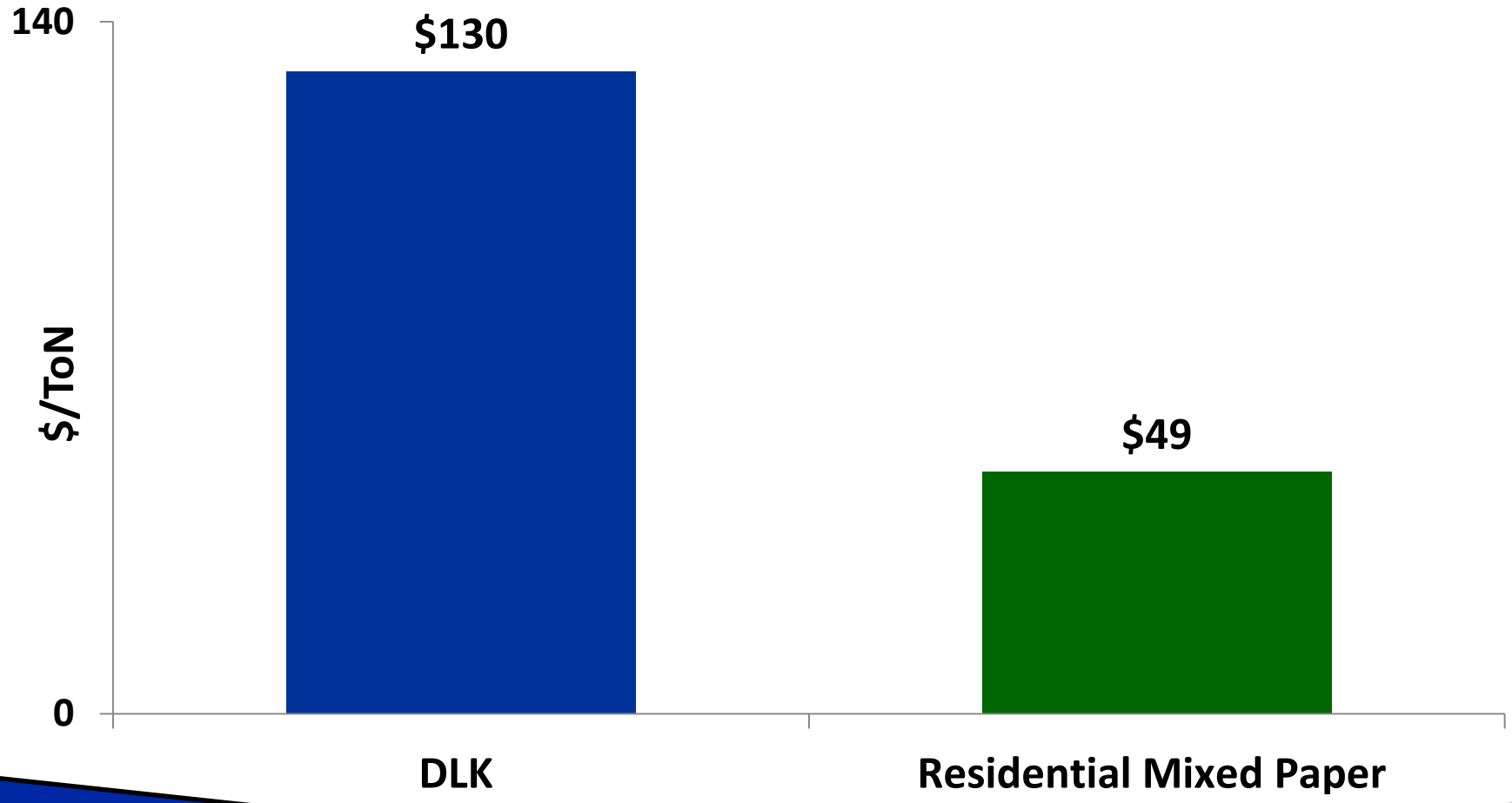
~ 31 Million Tons



The need is Quality, Quality, Quality

Hierarchy of Recovered Material Value – "Bulk" Grades

DLK vs. Residential Mixed Paper - Yellow Sheet Buffalo Price per Ton - 5 year avg. - 2011 - 2015



Mixed Waste Processing

AF&PA Study on MWP found…

- Recovered Paper Quality and Quantity concerns justified
- Usually produces lower quality paper fiber
  - Contamination is a big issue for the paper industry
- Sometimes fail to separate paper fiber
- Recovers a lower percentage of paper fiber
- MWP depend more on revenue from plastics and metals
- Soiled paper may be used for Waste-to-Energy

- **Residential mixed waste processing facilities: these facilities are designed to process waste generated from residential sources, including single and multi-family housing. This feedstock is considered a "wet" stream because it consists of raw garbage including wet putrescibles such as food waste, diapers, etc., mixed with recyclable materials. Generators are given no instructions on how to prepare their recyclables for processing. This feedstock poses unique processing challenges.**

- **Residential mixed waste processing facilities have also been in existence for more than two decades. Their history, however, has been marked by more failures than successes**

- **Residential mixed waste is the most challenging feedstock because residential mixed waste processing facilities must be able to separate the recyclables from the mixed waste and ensure they are clean and dry enough to meet end market requirements.**

- **Recovering paper fiber from residential mixed waste processing facilities is more challenging because mixing paper fiber and wet waste will cause the fiber to become wet. The number of likely markets for those fibers will be fewer and of less value than paper fiber recovered from more traditional recycling methods.**

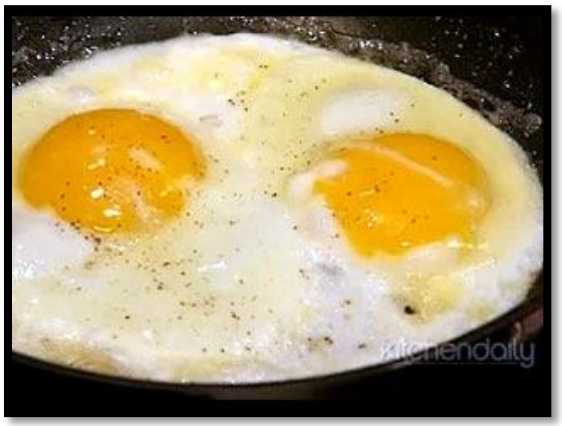
Residential mixed waste processing facilities do not require generators to separate designated recyclables from non-recyclables. As a result, workers at those facilities are more likely to be exposed to pathogens, needles, and hazardous and toxic substances that are carelessly placed in mixed waste.

Myth vs. Fact

Myth: Once recyclables are mixed with solid waste, they can effectively be recovered.

Fact: Paper is easily contaminated and you can't unscramble an egg

You can't make this ……into this



Some of the packaging made from Recovered Fiber

Pizza Boxes

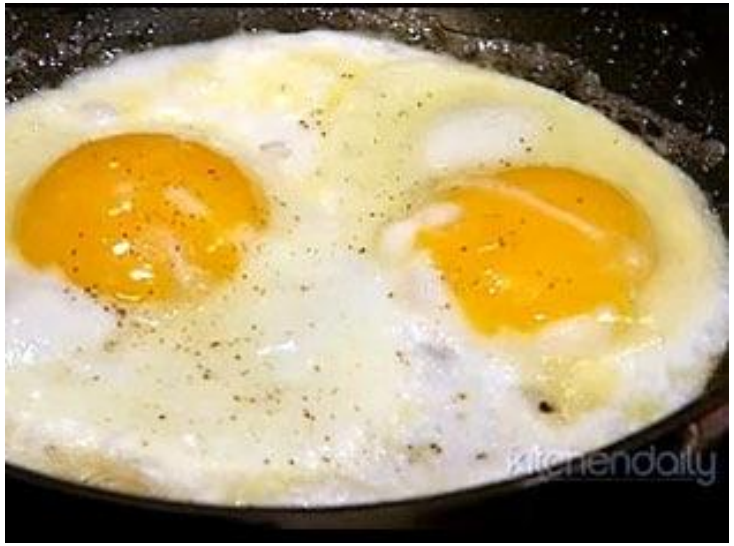
Folding Cartons

Food Service Take-out

A Few of the things that should NOT be part of the recipe for your pizza box

Why?

Because once an egg is scrambled, you can't UNSCRABLE it



Myth vs. Fact

Myth: Separation Technology has advanced significantly to enable contamination-free recovered materials

Fact: No leap-frog technology has emerged in the past 20 years. Still use conveyors, optical sorting, screens, trommels, with lots of hand sorting for quality.

- Slight "evolution" only; nothing revolutionary…don't get sucked in with terms like "optical sorters" and "ballistic separators"

Myth vs. Fact

Myth: Recovery rates from Dirty MRFs (or Mixed Waste processing facilitates) are pretty high

Fact #1: Contaminants, Prohibitives and Outthrows are just taking a MUCH longer ride to the landfill, with a bigger carbon footprint.

Fact #2: Must read the "fine print" to really define "recovery rates"

Myth vs. Fact

Myth: Industry standards say mills can accepts 5% contamination in bales of paper

Facts:

- P.S.I. standards state: "recovered paper stock must be free of food debris, medical or hazardous wastes, an poisonous or other hazardous substances or liquids"

  (so zero food waste is allowed…not 5% like some claim)

- In certain paper grades, "prohibitives" can be "up to" 2%, but prohibitives in most paper grades are not permitted at all, or are allowed at ½ of 1% or 1%.

P.S.I. Specification for Recovered Paper Stock

Prohibitive Materials

The term "Prohibitive Materials is defined as:

a. **Any materials which by their presence in a packing of paper stock, in excess of the amount allowed, will make the packaging unusable as the grade specified.**

b. **Any materials that may be damaging to equipment.**

(Typically allowable percentages are ½ of 1%, or 1%)

Myth vs. Fact

Myth: The momentum is growing for mixed waste processing facilities

Fact: Most recent newly owned or planned facilities are shut down, postponed/delayed or abandoned

Conclusion

I love my daughter's puppy

But keep his "business" separated from recyclable materials

Thank You

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