

NATIONAL SWORD AND THE PANDEMIC:

WHAT'S NEXT FOR RECYCLING?

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IN 2015, EVERYONE WHO
PREDICTED WHAT THEY
WOULD BE DOING
IN FIVE YEARS

WAS WRONG

WHAT I WILL BE TALKING ABOUT

National Sword

- Impact on markets & processing

The Pandemic

- Impact on collection, raw materials & markets

Markets



CHINA: SHORT HISTORY

- 2013: Green Fence
- 2017: National Sword
- 2018: Mixed paper/mixed plastic import ban
- 2021: Ban on all paper recyclables?

RECYCLED PAPER MARKETS: EXPORTS

Exports remain a major end market

- 40% In 2016
- 35.7% in 2019
- China receives 32% of exports (11.4% of all end markets)

Other countries stepped in to replace China

- India & 9 other Asian countries: 47% of exports
- Mexico & Canada: 14%

Recycled paper fiber:

- China & Southeast Asia

RECYCLED PAPER DOMESTIC MARKETS:

American capacity to use recycled paper is increasing

Domestic containerboard is now the largest end market

- 37.8% in 2019

RECYCLED PLASTIC EXPORTS

2019: 1.46 billion pounds (73,000 ton)

- Down from 3.68 billion pounds in 2017
- 15% of end markets?

PET & HDPE exports in steady decline for a decade

- Less than 10% for both
- Domestic markets got bigger before the National Sword

SOURCE: RESOURCE RECYCLING, DOC

RECYCLED PLASTIC EXPORTS BY COUNTRY/AREA

Asian countries were 8 of the 10 largest export markets

- 50% of exports
- India the leading Asian export market (12.8%)

Canada the biggest export market (23.6%)

- Mexico number 5 (5.4%)

China still takes recycled plastic pellets

WHAT'S NEXT FOR EXPORTS OF RECYCLED PAPER AND PLASTICS?

China:

- Ban on mixed paper & plastics here to stay
- Ban on OCC likely at end of 2020
- No ban on recycled pulp
- Chinese mills will have a 13 million ton fiber shortage in 2021
- No ban on recycled plastic pellets?

Other countries:

- ?

PROCESSING RECYCLABLES: TECHNOLOGICAL ADVANCES

Focus on making an industrial raw material

- Clean bales
- Slow down processing lines
- Technology breakthroughs

OPTICAL SORTING



ROBOTICS & ARTIFICIAL INTELLIGENCE



NATIONAL SWORD IMPACTS: SUMMARY

Exports:

- Little impact on paper exports
- Major impact on plastic exports

Domestic recycled content capacity:

- Major increases for both

Processing technology:

- Forced technology improvements
- Getting more recyclables

Market value:

- Negative impact

THE PANDEMIC



COLLECTION & PROCESSING

100 + curbside recycling & drop-off programs stopped

Commercial recycling & garbage collection stopped at non-essential businesses

Garbage & recycling essential businesses

Increased safety awareness for industry employees

- More space between workers on processing lines
- Plastic sheeting separating workers, etc.

CHANGES IN CONSUMER SPENDING:

These changes are important because what we buy is what we recycle or throw away

- Grocery buying spiked then went back to a little above normal
- Home grocery delivery up 400% after peaking at 560%
- Home restaurant meal delivery up 50% after peaking slightly higher
- Apparel sales down 50% (except face masks)
- Office supplies up 6% (home offices): levelled off
- Restaurant & travel spending tanked: now very slowly recovering

E-COMMERCE

E-commerce = 15.1% of retail sales 2d quarter 2020

- 5% when tracking began in 2004
- Very slow increase until the pandemic

E-commerce sales up 37.0% 2d quarter 2020 from the first quarter

- 44.4% (year over year)
- Overall retail sales down 3.6% (year over year)

PANDEMIC CHANGES IN PAPER USE

Less printed paper because of school & office closings

- 20 machines taking downtime 2 or 3d quarters
- Several mills shut permanently

More packaging because of e-commerce & home food delivery

- Containerboard operating rate at 92%

PANDEMIC CHANGES IN PLASTIC USE

Fiber is the biggest recycled PET market

- Clothing sales down
- Carpet sales in decline before the pandemic

Beverage & food containers are the second biggest recycled PET market

- Sales back to normal

Automotive versus packaging

Bags

REUSABLES/REFILLABLES

Reuse has taken a big hit

Grocery stores won't allow reusable bags

Bulk sales (nuts, grains, etc.) blocked off

Coffee stores ban reusable containers

LOOP?

THE NEW NORMAL?

Will we go back to our offices & retail stores?

- Social animals
- Lower productivity from home offices
- Not all jobs need an office
- Convenience of e-commerce

Impact on waste & recycling?

PANDEMIC CHANGES IN WHO RECYCLES

- Less waste & recyclables from businesses
- More from residences
- Overall down
- Market impact when businesses reopen?

PANDEMIC & CONTAINER DEPOSIT MATERIALS

9 of 10 container deposit states suspended redemption

Back to normal

PANDEMIC REINFORCED: INDUSTRY RELIES ON RECYCLABLES



PANDEMIC IMPACTS: SUMMARY

Economy hit hard

Spending patterns changed

E-commerce took off

Supply channels disrupted

Generation changed

Industry reliance on recyclables underscored

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