



**Recycling Markets:
2024 and Beyond
Chaz Miller
NEWMOA
August 20, 2024**

NAUSET DISPOSAL

ALL PRICE DATA FROM RECYCLING MARKETS.NET STARTING JAN 31, 2020

- AUGUST 15 2024 DATA
- COVERS ALL CURBSIDE RECYCLABLES
- MRF SELLING PRICE

TO SAVE YOU FROM DEATH BY POWER POINT, I HAVE A GREAT DEAL OF DATA IN MY SPEAKER NOTES.

- A PDF OF MY SLIDES & SPEAKER NOTES WILL BE AVAILABLE TO YOU FROM NEWMOA

BUT FIRST

What Are These & Where Do They Go?



MONTGOMERY COUNTY DEP

RECYCLABLES ARE SIMPLY **RAW MATERIALS LOOKING FOR BUYERS**

- **THEY ARE COMMODITIES WHOSE PRICES BOUNCE AROUND**

RECYCLABLES ARE BOUGHT NOT SOLD

BUYERS WANT

- CONSISTENT QUANTITY
- CONSISTENT QUALITY
- AT AN ACCEPTABLE PRICE
- *LOOKING FOR THAT SWEET SPOT WHERE BUYERS & SELLERS ARE HAPPY & NO ONE IS STEALING THE RECYCLABLES*

NOTE: RECYCLABLES CAN BE CIRCULAR BUT MANY MARKETS AREN'T AS THE SLIDES POINT OUT

- *LOCAL GOVERNMENTS & MRFS ARE MORE INTERESTED IN REVENUE THAN MEETING CIRCULARITY CRITERIA*

Aluminum Cans



RECYCLING TODAY

Aluminum Cans



ALL AMERICAN 930 ALUMINUM FOUNDRY

WHERE DO THEY GO?

ALUMINUM PRODUCTS ARE ALLOY SPECIFIC

- ALUMINUM CANS CAN ONLY BE USED TO MAKE ALUMINUM CANS
- IS THAT CIRCULAR OR WHAT?
- REQUIRES AN EDDY CURRENT SEPARATOR

ALUMINUM RECYCLING RATE 2018 EPA DATA:

- CANS: .670 MT, 50.4%
- PACKAGING: .670 MT, 34.9%
- NONDURABLES & DURABLES: NA
- TOTAL ALUMINUM: .670, 17.2%

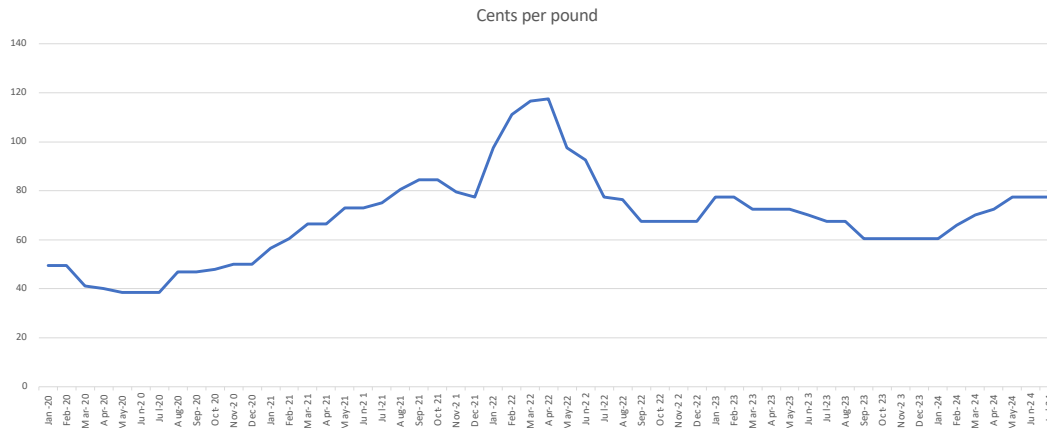
EPA DATA FOR 2018 (MOST RECENT):

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL ALUMINUM DATA, TABLE 7
- PACKAGING SPECIFIC DATA, TABLES 24 & 25

INDUSTRY DATA: 2022

- 45.2% CONSUMER RECYCLING RATE (https://www.aluminum.org/sites/default/files/2023-09/EPW-Subcommittee-Testimony_092823.pdf)

Aluminum Cans - Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

ALUMINUM CANS AUGUST 15 2024

- **77.5 CENTS PER POUND**
- **SAME AS LAST MONTH**
- UP 10 CENTS YOY (67.5 CENTS)
- DOWN 48.8 CENTS FROM MAR 11 2022 HIGH (\$1.238)
- UP 35.87 CENTS FROM 2020 LOW (39.13 CENTS)
- 1.56 CENTS ABOVE NATIONAL AVERAGE (75.94 CENTS)
- NORMALLY 2 OR 3 CENTS ABOVE NATIONAL AVERAGE

MARKET: CANS

- SEASONAL DEMAND SIMILAR TO PET PUSHING PRICE UP IN THE SPRING, FLAT IN THE SUMMER THEN DECLINING
 - BEER SALES DROPPING AS CONSUMERS SWITCH TO OTHER BEVERAGES
 - DISTILLED SPIRITS NOW SLIGHTLY LARGER MARKET SHARE THAN BEER
- OTHER USE COULD BE CAST ALUMINUM BUT RARE IN NORTH AMERICA
- ALLTIME HIGH - \$1.238 MARCH 2022**

Steel Cans



CHEMISTRY WORLD

Steel



STEEL FABRICATION SERVICES

WHERE DO THEY GO?

STEEL CANS CAN BE MADE INTO ANY STEEL PRODUCT

- ALL YOU NEED TO SORT IS A MAGNET
- ELECTRIC ARC FURNACES, 70 PERCENT OF US STEEL PRODUCTION, RELY ON STEEL SCRAP OF ALL KINDS
- PBS PLANET MONEY <https://www.npr.org/2024/03/20/1197958509/steel-mini-mill-nucor-Bethlehem>
- VERY GOOD DISCUSSION OF THE RISE OF THE ELECTRIC ARC FURNACE

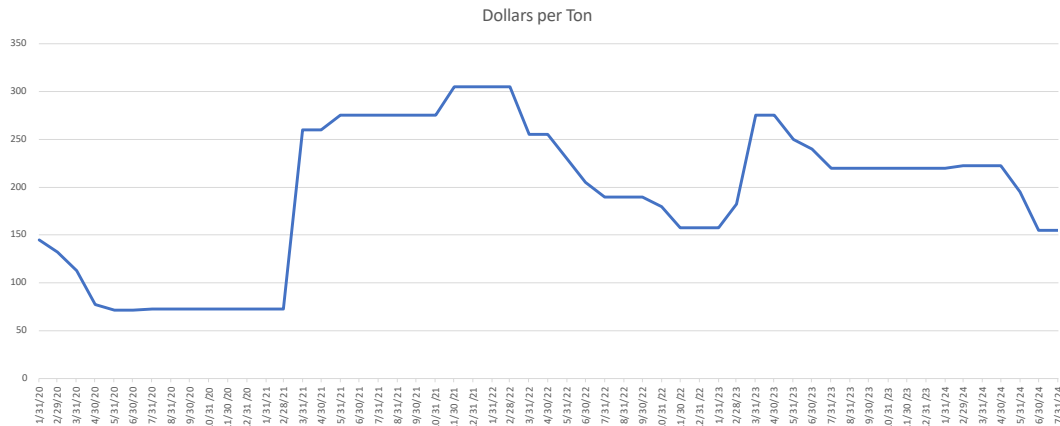
STEEL RECYCLING RATE 2018 EPA DATA:

- CANS: 1,290 MT, 70.9%
- ALL PACKAGING: 1,630 MT, 73.8%
- NONDURABLES & DURABLES: NA
- TOTAL FERROUS: 6,360 MT, 33.1%
- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL STEEL DATA, TABLE 7/PACKAGING SPECIFIC DATA, TABLES 24 & 25

INDUSTRY RECYCLING DATA FOR 2019:

- STEEL CONTAINERS: 63.2% & OVERALL STEEL: 69%
- <https://www.steel.org/wp-content/uploads/2021/08/AISI-and-SMA-Steel-Recycling-Rates-Report-Final-07-27-2021.pdf>

Steel Cans – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

STEEL CANS AUGUST 15 2024

- **\$155 PER TON**
- **DOWN \$40 FROM LAST MONTH (\$195)**
- DOWN \$90 YOY (\$240)
- DOWN \$110 FROM ALL TIME HIGH (\$305)
- UP \$123.50 SINCE 2020 LOW (\$71.50)
- SAME AS NATIONAL AVERAGE (\$152.81)
- VARIES ABOVE OR BELOW NATIONAL AVERAGE

MARKET ELECTRIC ARC FURNACES

- 70% US PRODUCTION IS EAF WHICH RELIES ON SCRAP

HIGH : DEC 21 – JAN 22 \$305

LOW: WINTER 2015: \$35

Glass Bottles



CAP GLASS

WHERE DO THEY GO?

GLASS BOTTLES HAVE DIFFERENT COLORS WHICH COMPLICATES MAKING THEM BACK INTO NEW BOTTLES

- BOTTLES FROM BEVERAGE CONTAINER DEPOSIT STATES & POSSIBLY FROM DUAL STREAM COLLECTION PROGRAMS CAN BE MADE INTO BOTTLES
- MIXED COLOR CULLET IS TURNED INTO FIBERGLASS OR A VARIETY OF AGGREGATE MARKETS

GLASS RECYCLING RATE EPA DATA: 2018

- BOTTLES & JARS: 3,060 MT, 31.3%
- DURABLES: NA
- TOTAL: 3,060 MT, 255

EPA DATA FOR 2018 (MOST RECENT):

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL GLASS DATA, TABLE 6
- PACKAGING SPECIFIC DATA, TABLES 24 & 25

GLASS INDUSTRY DATA: 2022

- GLASS BOTTLES & JARS: 31.3%
- <https://web-assets.bcg.com/56/7c/6670ab5741579ab31767b5a10bc1/gpi-brochure-v19-bcg.pdf>

Glass Cullet

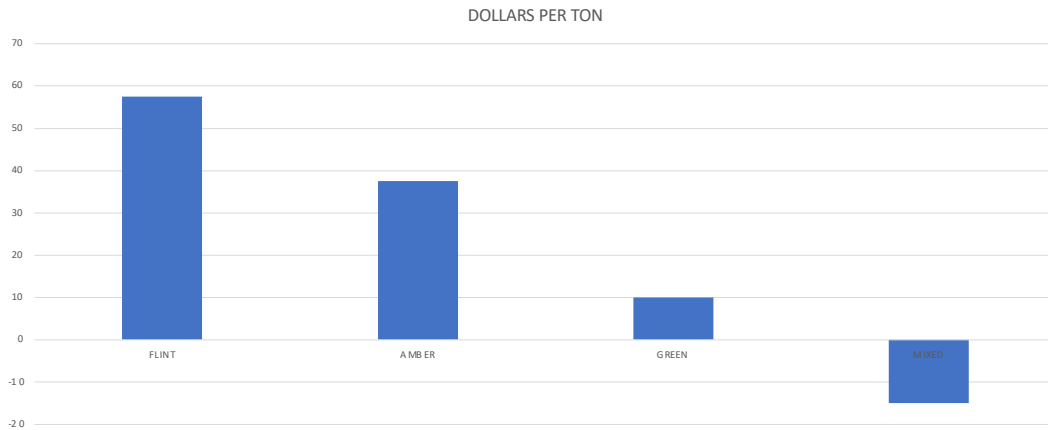


CAP GLASS

MIXED UNSORTABLE BROKEN GLASS – CULLET – IS TURNED INTO FIBERGLASS OR AGGREGATE FOR A VARIETY OF USES

- FIBERGLASS INDUSTRY AN AGGRESSIVE USER DUE TO IMPROVED PROCESSING TECHNOLOGIES THAT ELIMINATE CERAMICS FROM CULLET & NO COLOR REQUIREMENTS
- OTHER USES INCLUDE REFLECTIVE PAINT, MATCH HEADS, GLASPHALT, ETC.

GLASS NORTHEAST AUGUST 2024



DATA: RECYCLING MARKETS.NET

CULLET PRICES STABLE, DON'T CHANGE OFTEN

FLINT (CLEAR) \$57.50 PER TON

AMBER (BROWN) \$37.50 PER TON

GREEN \$10 PER TON

MIXED \$-15 PER TON

DECLINING DEMAND FOR ALCOHOLIC PRODUCTS HAS LED TO DECLINING SALES OF GLASS BOTTLES

- THREE PLANTS CLOSED LAST TWO YEARS
- SIMILAR TO ALUMINUM CAN PRODUCTION DECLINE

Market Drivers Recycled Metals and Glass

Diminished demand for cans & bottles

Metals

- Aluminum can shipments down as beer consumption declines to lowest level in 25 years
- Non-alcoholic beverage can shipments up
- Chinese steel overproduction flooding global markets

Glass

- O-I 12.5% YOY drop in shipments: softer demand – “curtailments” in production
- Same problem besetting other glass companies
- Three glass plants closed & one almost closed last two years

CNBC SPIRITS SALES BEAT OUT BEER & WINE FOR SECOND STRAIGHT YEAR DESPITE LITTE GROWTH

- <https://www.cnbc.com/2024/02/07/spirits-sales-top-beer-and-wine-in-2023.html#:~:text=Food%20%26%20Beverage-,Spirits%20sales%20beat%20out%20beer%20and%20wine,straight%20year%2C%20despite%20littl,e%20growth&text=U.S.%20spirits%20maintained%20market%20share,in%202023%20to%20%2437.7%20billion.>

MICROBREWERIES RETRENCHING: AFTER A BOOM, CRAFT BEER CONSIDERS A NEW CREED: LESS IS MORE

- <https://www.nytimes.com/2024/01/26/dining/drinks/america-craft-beer.html>

SMI: BEHIND STRATEGIC'S BANKRUPTCY, INTEREST RATES AND MARKET SHIFTS

- <https://resource--recycling-com.cdn.ampproject.org/c/s/resource-recycling.com/recycling/2023/12/08/behind-strategics-bankruptcy-competition-and-low-demand/amp/>

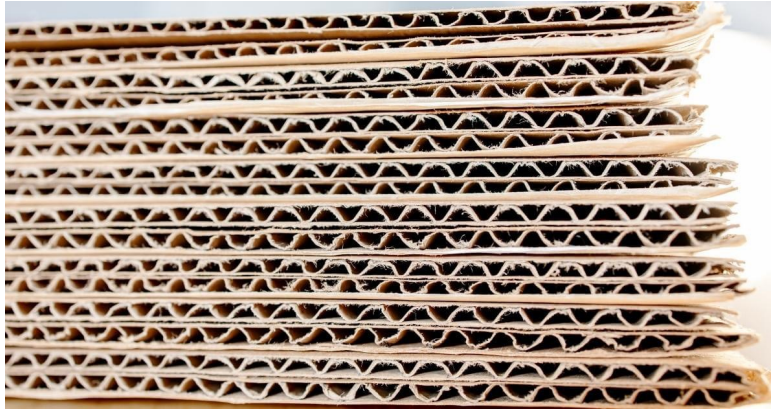
Corrugated “cardboard” Boxes



WASTE360

LET'S LOOK AT THE TWO RESIDENTIAL GRADES STARTING W/CORRUGATED BOXES

Linerboard & Corrugated Medium



BAY CITIES PACKAGING & DESIGN

WHERE THEY GO

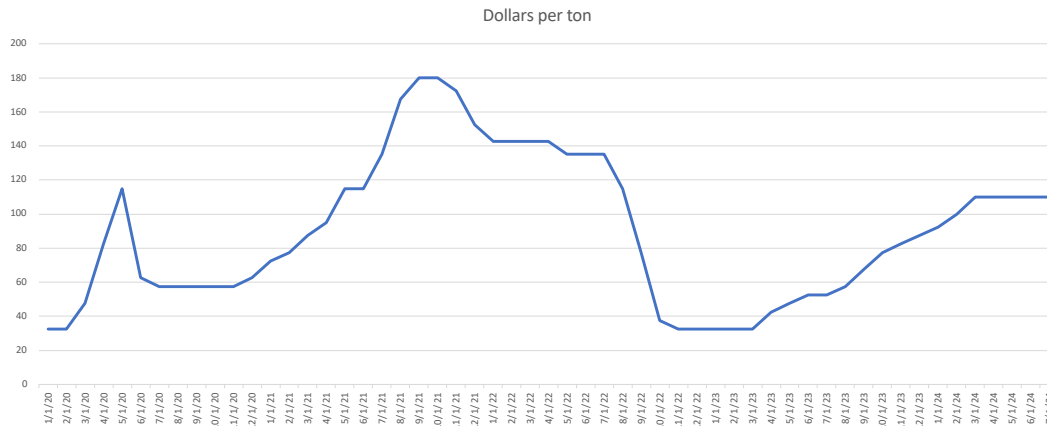
CORRUGATED BOXES ARE MADE BACK INTO BOXES

- OR, MORE PRECISELY, THE TWO PRODUCTS THAT MAKE A BOX:
- LINERBOARD & CORRUGATED MEDIUM
- 60% OF PAPER USED IS PACKAGING & MOST OF THAT IS BOXES

EPA PAPER RECYCLING RATE 2018: 45,970 MT, 68.2%

- CORRUGATED BOX RECYCLING RATE 2018: 32,090 MT, 96.5%
- EPA ALL PAPER PACKAGING RECYCLING RATE: 33,890 MT, 80.9%
- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL PAPER DATA, TABLE 5
- PACKAGING SPECIFIC DATA, TABLES 24 & 25

OCC – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

OLD CORRUGATED CONTAINERS – "CARDBOARD" SHIPPING BOXES

- **\$110 PER TON AUGUST 15, 2024**
- **SAME AS LAST MONTH**
- UP \$57.50 YOY (\$52.50)
- DOWN \$70 FROM SEPTEMBER-OCTOBER 2021 HIGH (\$180)
- \$82.50 ABOVE THE 2020 LOW (\$27.50)
- \$2.50 OVER NATIONAL AVERAGE (\$107.50)
- AHEAD NATIONAL AVERAGE EVERY MONTH SINCE JAN 21 EXCEPT LAST OCT

MARKETS PRIMARILY LINERBOARD OR CORRUGATED MEDIUM

- RAW MATERIALS FOR BOXES
- SOFT DEMAND FOR BOXES
- OCC PRICES UNCOMFORTABLY HIGH FOR MILLS

HIGH – LOW PREVIOUS 20 YEARS FOR OCC

- **HIGHS IN 2011** AT HEIGHT OF CHINESE IMPORTS (\$119) & 2017 WHEN CHINESE MILLS HOARDING (NAT) & 2021 (\$180)
- **LOWS IN DEC 2008** GREAT RECESSION & WINTER 2019: \$27.50

Residential Mixed Paper



ROGUE DISPOSAL & RECYCLING

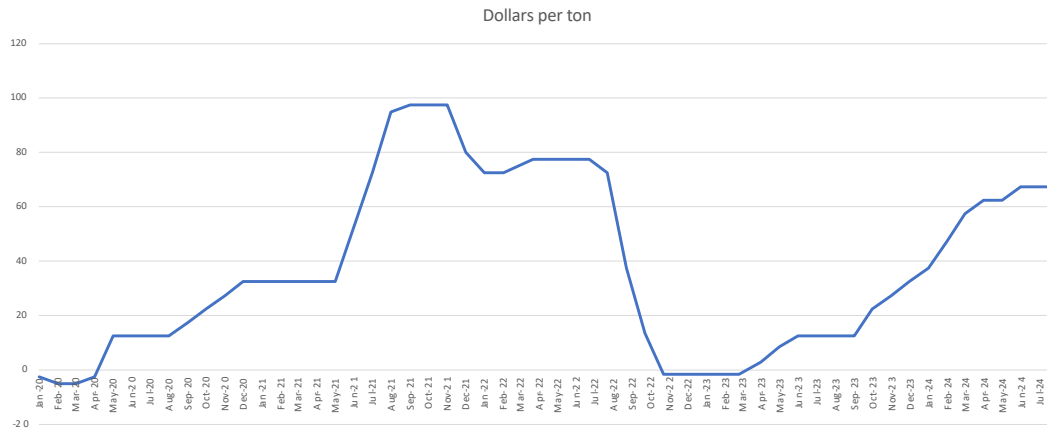
RESIDENTIAL MIXED PAPER, IS, AS YOU CAN SEE, A WIDE VARIETY OF PAPER

- NO GOOD DATA SOURCES FOR ITS TONNAGE OR RECYCLING RATES SINCE COMPOSITION VARIES SO MUCH

CAN BE USED FOR BOXES, VARIOUS PAPER GRADES, MOLDED PULP, ETC.

- DUPLEX BOARD IS A UNIQUE KIND OF PAPERBOARD
- OFTEN USED FOR PHARMACEUTICAL PACKAGING, GARMENT BOXES, PAPER PLATES & CUPS

RMP – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

RESIDENTIAL MIXED PAPER - JUST ABOUT ALL PAPER EXCEPT TISSUE GRADES

- **\$67.50 PER TON AUGUST 15, 2024**
- **SAME AS LAST MONTH**
- UP \$65 YOY (\$12.50)
- DOWN \$30 FROM SEPTEMBER-NOVEMBER 2021 HIGH (\$97.50)
- UP \$72.50 OVER 2020 LOW (-\$5)
- \$3.13 BELOW NATIONAL AVERAGE (\$70.63)
- USUALLY ABOVE NATIONAL AVERAGE **BUT** BELOW LAST WINTER & NOW
- RISES & FALLS AT A DISCOUNT TO OCC
- SPREAD B/W OCC & RMP IS \$48.50 SIGNALING LESS INTEREST IN RMP

MARKETS CAN BE SAME AS OCC BUT MORE LIKELY FOR LOWER GRADE PACKAGING OR PRODUCTS

- MOST MILLS USE RMP AS AN ADDITIONAL, NOT A PRIMARY, RAW MATERIAL
- BENEFITTING FROM HIGH OCC PRICE

HIGH – LOW - BASED ON FIVE YEARS DUE TO NEWNESS OF THIS GRADE

- HIGH – 97.50 2021 – LOW – FEB – MAR 2020 (-\$5)
- PRE-COVID LOW -\$2.50 FROM SPRING 2017

New Paper Recycled Content Capacity: 2017 & On



PHOTO NORPAC

THIS IS A PICTURE OF NEW RECYCLED PAPER PULPING MACHINE FOR NORPAC'S MILL IN LONGVIEW WA

NERC FINAL REPORT ON EXPANDED RECYCLED PAPER CAPACITY RELEASED IN MARCH

AMAZING SUCCESS STORY

FACILITIES EITHER EXPANDED CAPACITY FOR AN EXISTING MACHINE, CONVERTED A PRINTED PAPER MACHINE TO PACKAGING OR ARE A NEW MILL ("GREENFIELD")

New Paper Recycled Content Capacity: 2017 & On

- 24 projects completed
- Potential capacity increase of 8 million tons
- Older less efficient capacity closing
- 2024: Total Fiber Recovery, VA, now operating
- 2026: Graphics Packaging, TX, to open
- Bio Pappel/McKinley, WA mill announced likely closure. This facility reopened in 2020 after converting from a printed paper to packaging paper mill.

Potential new mill:

- Crossroads, NV (formerly UT) to open Sept 2026 (if state tax abatements & employee health care benefit assistance approved)

FINAL NERC REPORT ON INCREASED RECYCLED PAPER CONTENT CAPACITY WILL BE OUT THIS MONTH.

- SINCE 2017 COMPLETED 23 EXPANSIONS OF EXISTING CAPACITY, CONVERSIONS FROM PRINTING PAPER TO PACKAGING OR NEW MILLS.
- POTENTIAL EXPANDED CAPACITY MORE THAN 8 MILLION TONS

HOWEVER, DECLINE IN BOX DEMAND HAS CLOSED UP TO A DOZEN LESS EFFICIENT FACILITIES
TOTAL FIBER RECOVERY IS A RECYCLED FIBER PULP FACILITY

SEVERAL NINE DRAGONS EXPANSIONS ON ECONOMIC DOWNTIME

- THE COMPANY DID NOT MAKE A PROFIT IN THE US IN 2023
- RECYCLED FIBER PULP EXPORTS COLLAPSED FROM 532,000 TONS IN 2022 TO 211,000 TONS 2023
- AVERAGING 4,000 TONS A MONTH 2024

Recycled Paper Exports



PHOTO: LA TIMES: THE PORTS OF LOS ANGELES & LONG BEACH

WHY DO WE EXPORT RECYCLABLES?

- BECAUSE SOMEONE WANTS THEM MORE THAN WE DO

METAL & PAPER THE BIGGEST EXPORTS

- ALUMINUM CANS & GLASS CULLET/BOTTLE NOT EXPORTED

Recycled Paper Exports 2016 – 2024 (2024 projected from H1)



SOURCE: <https://resource-recycling.com/recycling/2024/08/13/sizable-drop-in-fiber-exports-plastics-remain-flat/>

PAPER EXPORTS DROPPED FROM 21.7 MILLION TONS IN 2016 TO 14.23 MT IN 2023

- DOWN 2.3 MILLION TONS FROM 2022 OR 13%

H1 2024 6.57 MT FOR PROJECTED 13.14 MT 2024

- DOWN 15% H1 2023

ASIAN ECONOMY WEAK & DOMESTIC DEMAND IS UNDERCUTTING EXPORTS

- INDIA, THAILAND, MALAYSIA & MEXICO RECEIVE 63%
- 68% OF EXPORTS OCC, 15% RMP
- OCC EXPORTS HAVE INCREASED WHILE RMP HAVE DECREASED OVER THE LAST DECADE
- MIDDLE EAST WAR CAUSING BOATS TO GO SOUTH AROUND THE CAPE OF GOOD HOPE ADDING COST & TIME

RECYCLED FIBER PULP EXPORTS COLLAPSED FROM 532,000 TONS IN 2022 TO 211,000 TONS 2023

- AVERAGING 4,000 TONS A MONTH 2024

EUROPEAN EXPORTS UP <https://www.recyclingtoday.com/article/europes-paper-surplus/>

US IMPORTS OF RECYCLED PAPER INCREASED BY 49% H1 YOY

- 487 MTS, MOSTLY FROM CANADA

PAPER EXPORTS WILL BE BIG (1/3) AS LONG AS MANUFACTURING IS "OUTSHORED"

- *RESHORING IN IN TERMS OF MANUFACTURING JOBS UP 263% FROM 2019*

Market Drivers Recycled Paper

Demand:

- Containerboard production up 7% YOY
- New 2023 capacity aggressively competing for OCC, RMP
- “High” price of OCC & RMP a problem for mills

Supply:

- Lower product sales mean retail stores generating less OCC
- Residential supply not stepping up
- Imports from Canada increasing

Wildcards:

- Export markets soft
- Overall box production continue to increase?
- Unit sales rising?
- E-commerce continued slow increase?

AF&PA DATA: “PAPER INDUSTRY CAPACITY & FIBER CONSUMPTION SURVEY”

- <https://www.recyclingtoday.com/article/paper-capacity-production-declines-but-slight-growth-predicted-in-24/>
- PRODUCTION DOWN 7.2% Q1, UP
- HIGH PRICE OF OCC: <https://resource-recycling.com/recycling/2024/05/14/mill-operators-sound-off-on-rising-fiber-prices/#:~:text=OCC%20end%20users%20have%20been,first%2Dquarter%20earnings%20this%20year.>

- INTERNATIONAL PAPER: Q1 \$25 MILLION MORE YOY ON OCC

Q1 ECOMMERCE SALES AS PERCENTAGE OF OVERALL RETAIL SALES

- 15.9% SHARE OF RETAIL SALES (ADJUSTED FOR SEASONAL VARIATION) vs 14.9% YOY
- LOWER THAN PREVIOUS Q42020 RECORD OF 16.4 IN Q2 2020
- 15.6% SHARE UNADJUSTED VS 14.8% YOY
- HIGHEST 16.8 IN Q32020
- <https://www.census.gov/retail/ecommerce.html>

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PET Bottles



GREENMAX INTCO RECYCLING

WHERE THEY GO

PET BOTTLES ARE MADE BACK INTO BOTTLES OR FIBER (CARPET/CLOTHING, ETC.) PRODUCTS

- FIBER COMPANIES CREATED PET RECYCLING & WERE THE PRIMARY MARKET UNTIL 2020
- NOW A LARGER PERCENTAGE GO TO BOTTLE MARKETS – THEN FIBER – THEN OTHER END USES

EPA PET BOTTLE RECYCLING RATE 2018: 910 TT, 29.1%

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL PLASTIC DATA, TABLE 8
- PACKAGING SPECIFIC DATA, TABLES 24 & 25

INDUSTRY RECYCLING DATA FOR 2022:

- PET BOTTLES 29% <https://napcor.com/news/2022-pet-recycling-report/>
- STINA/ISRI/NAPCOR REPORT 1,910.8 Millions of Pounds) <https://resource-recycling.com/recycling/wp-content/uploads/sites/3/2024/04/Post-Consumer-Recycling-Data-PR-3-28-2024.pdf>

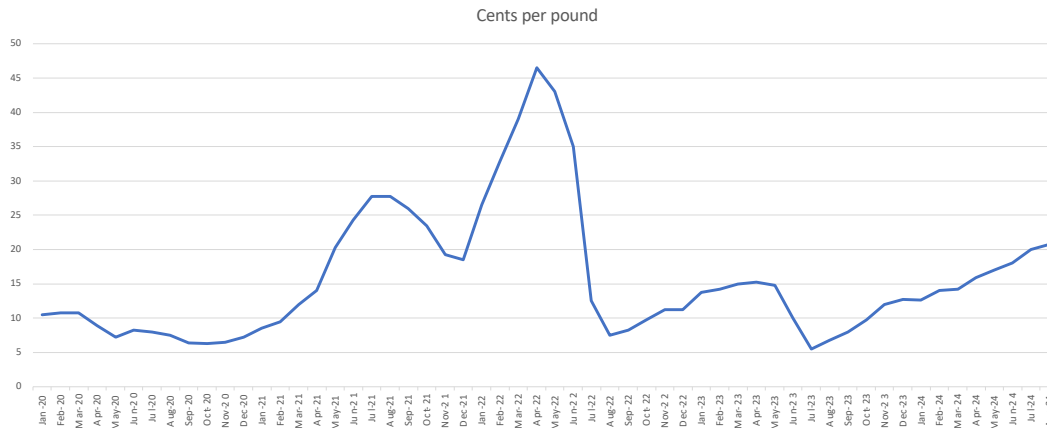
PET Fiber Products



Floorsome

PET BOTTLES CAN ALSO BE USED TO MAKE CARPETS & OTHER FIBER PRODUCTS

PET – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

POLYETHYLE TEREPHTHALATE – SOFT DRINK & WATER BOTTLES

20.75 CENTS PER POUND AUGUST 15 2024

- UP 2.75 CENTS FROM JUNE & 0.75 CENTS FROM END OF JULY (18 & 20 CENTS)
- UP 15.5 CENTS FROM A YEAR AGO (5.5 CENTS)
- DOWN 25.88 CENTS SINCE ALL TIME HIGH (46.63 CENTS – MAY 22)
- UP 14.62 CENTS OVER 2020 BOTTOM (6.13 CENTS)
- 16.75 CENTS OVER ALL-TIME LOW (4 CENTS IN 2008)
- 2.48 CENTS ABOVE NATIONAL AVERAGE (18.27 CENTS)
- NORMALLY TRACKS A PENNY OR TWO ABOVE NATIONAL AVERAGE

MARKETS PRIMARILY BOTTLES & FIBER

- BEVERAGE INDUSTRY SALES SEASONAL: MEMORIAL DAY TO LABOR DAY:
- SUPPLY SMALLER IN THE SPRING & BIGGER IN THE SUMMER LEADING TO HIGHER PRICES IN THE SPRING THAN THE END OF THE SUMMER
- FIBER INDUSTRY CUTTING BACK DUE TO WEAK MARKETS:
- CARPET MARKET SHARE OF FLOOR COVERINGS 66% IN 2007 45% IN 2022
- <https://www.fcnews.net/2023/06/carpet-stats-soft-surface-stagnates-in-2022/>

Natural HDPE Bottles



BIFFA

WHERE THEY GO:

NATURAL HDPE BOTTLES & JUGS ARE USED FOR MILK, WATER & SOME FRUIT JUICES

- BECAUSE THEY ARE NOT DYED THEY CAN BE COLORED & USED BY MANY END MARKETS
- THEIR PRIMARY MARKET IS NON-FOOD-CONTACT COLOR HDPE PACKAGES SUCH AS DETERGENT & SHAMPOO BOTTLES

EPA NATURAL HDPE BOTTLE RECYCLING RATE 2018: 750 TT, 29.3%

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL PLASTIC DATA, TABLE 8
- PACKAGING SPECIFIC DATA, TABLES 22 & 24
- STINA/ISRI/NAPCOR REPORT: ALL HDPE BOTTLES 846.8 MILLION POUNDS:
<https://resource-recycling.com/recycling/wp-content/uploads/sites/3/2024/04/Post-Consumer-Recycling-Data-PR-3-28-2024.pdf>

COLOR HDPE Packaging



MJS PACKAGING

COLOR HDPE IS WIDELY USED FOR SHAMPOO, DETERGENT & OTHER BOTTLES & JUGS & TOOTHPASTE TUBES & A HOST OF NON-FOOD CONTACT PACKAGES

- THE COLOR CANNOT BE TAKEN OUT IN RECYCLING
- BECOMES A DARK MIXED COLOR WHEN RECYCLED TOGETHER

WHERE THEY GO

- NON-PACKAGING USES SUCH AS PIPES

EPA OTHER HDPE PLASTIC CONTAINER RECYCLING RATE 2018: 220TT, 18.1%

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL PLASTIC DATA , TABLE 8
- PACKAGING SPECIFIC DATA, TABLES 22 & 24
- STINA/ISRI/NAPCOR REPORT: <https://resource-recycling.com/recycling/wp-content/uploads/sites/3/2024/04/Post-Consumer-Recycling-Data-PR-3-28-2024.pdf>

PIPE



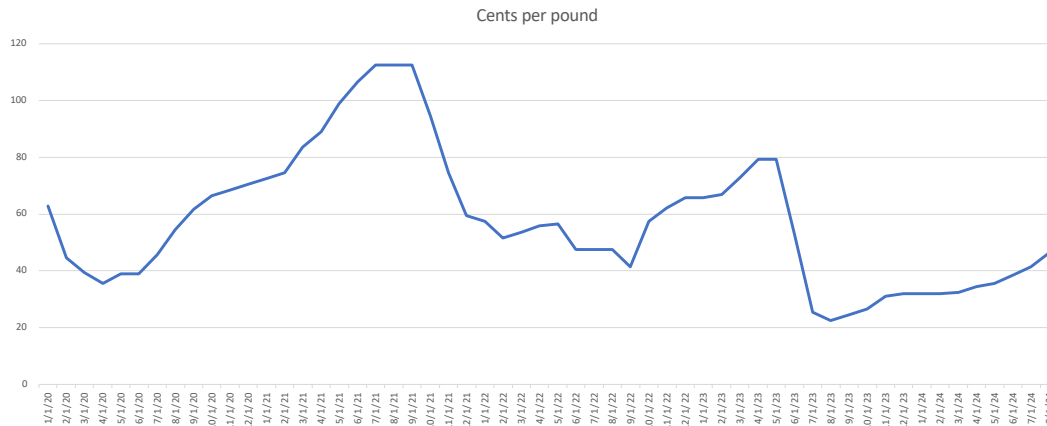
ADS

WHERE COLOR HDPE PACKAGES GO

PIPING & OTHER CONSTRUCTION-RELATED MARKETS

- WHO CARES ABOUT THE COLOR OF THE SEWER OR WATER PIPE?
- DISPLACES VIRGIN PLASTIC IN A PRODUCT THAT CAN LAST FOR A CENTURY

NHDPE – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

NATURAL HIGH DENSITY POLYETHYLENE – MILK JUGS & OTHER CLEAR HDPE BOTTLES OR JUGS

- **46.5 CENTS PER POUND**
- **5 CENTS FROM END OF JULY**
- **UP 22.5 CENTS YOY (22.5 CENTS)**
- **DOWN 66 CENTS SINCE JUL - OCT 21 HIGH (112.5 CENTS)**
- **UP 33.5 CENTS FROM ALLTIME LOW (13 CENTS)**
- **3.44 CENTS ABOVE NATIONAL AVERAGE (43.06 CENTS)**
- **NORMALLY ABOVE NATIONAL AVERAGE, SOMETIMES BY AS MUCH AS A NICKEL**

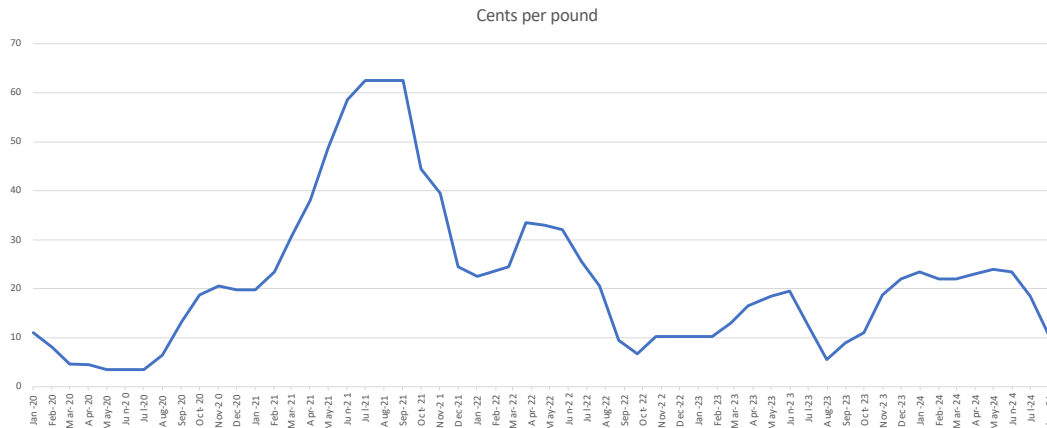
MARKETS PACKAGING & SOME CONSTRUCTION

- **HIGHLY VERSATILE B/C NOT DYED**
- **SUPPLY LIMITED BECAUSE USED IN ONLY A FEW PRODUCTS SUCH AS MILK & WATER JUGS, & FRUIT JUICES**
- **MILK SALES FLAT FOR A DECADE**
- **BRAND DEMAND DROVE 2021 & 2023 HIGH.**

HIGH – 112.5 CENTS – JUL – OCT 2021

LOWS - 13 CENTS (DEC 2008) & 35.5 (POST JAN 2020)

CHDPE – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

COLORED HIGH DENSITY POLYETHYLENE – HDPE PACKAGES WITH COLOR

- **9.5 CENTS PER POUND AUGUST 15 2024**
- **DOWN 8 CENTS FROM JUNE (18.5 CENTS) & 1.5 CENTS FROM JULY (10.5 CENTS)**
- UP 3.5 CENTS YOY (6 CENTS)
- DOWN 53 CENTS FROM JULY-SEPTEMBER 2021 HIGH (62.5 CENTS)
- UP 6 CENTS FROM 2020 LOW (3.5 CENTS)
- 0.62 CENTS ABOVE NATIONAL AVERAGE (8.88 CENTS)
- NORMALLY ABOVE NATIONAL AVERAGE BY 3 OR 4 CENTS
- CHDPE 75% LESS THAN THE VALUE OF nHDPE – AN UNUSUALLY LARGE GAP

MARKETS PRIMARILY CONSTRUCTION USES: PIPES, ETC.

- COLORED HDPE IS NOT AS VERSATILE B/C OF THE COLORANTS
- SUPPLY: VERY WIDE ARRAY OF CONSUMER PRODUCTS
- INTERESTING CORRELATION B/W NEW HOME PERMITS & STARTS & CHDPE MARKETS

HIGH LOW – PRESENT TO JUNE 2005

- *HIGH JULY-OCT 2021 62.5 CENTS*
- *LOW JULY 2020 3.5 CENTS & 6.56 DEC 2008*

Polypropylene Packaging



GREEN PHILLY

Paint Pails



KW PLASTICS

WHERE THEY GO

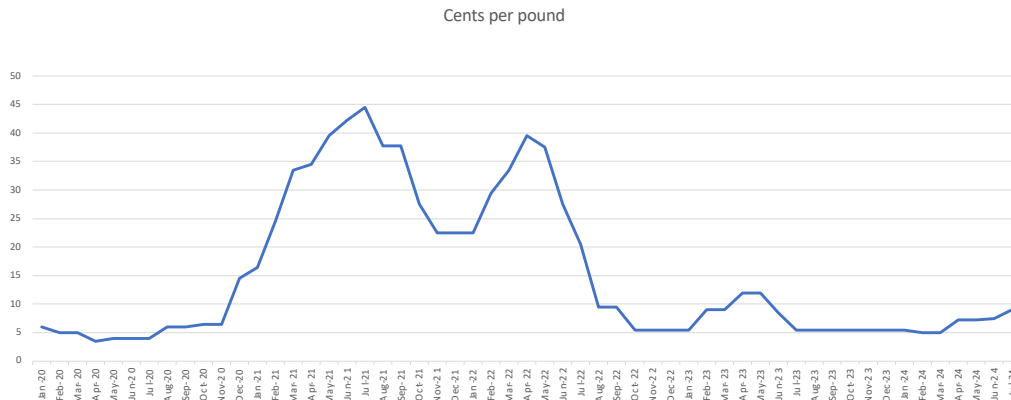
POLYPROPYLENE PACKAGING IS RECYCLED INTO PACKAGES OR A WIDE VARIETY OF DURABLE PLASTIC PRODUCTS SUCH AS TOYS, BATTERY CASES, GARDEN TOOLS, FIBER

- DO NOT CURRENTLY GO BACK INTO FOOD CONTACT BOTTLES
- THIS IS KW PLASTICS “TRU-SNAP” PAINT CONTAINERS
- MADE FROM 100 PERCENT RECYCLED PP

EPA PP RECYCLING RATE 2018: 20TT, 8%

- https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf
- ALL PLASTIC DATA , TABLE 8
- PACKAGING SPECIFIC DATA, TABLES 22 & 24
- STINA/ISRI/NAPCOR REPORT: PP & OTHER BOTTLES: 26.4 MILLIONS OF POUNDS:
<https://resource-recycling.com/recycling/wp-content/uploads/sites/3/2024/04/Post-Consumer-Recycling-Data-PR-3-28-2024.pdf>

PP – Northeast January 2020 – August 2024



DATA: RECYCLING MARKETS.NET

POLYPROPYLENE – YOGHURT CONTAINERS

- **9 CENTS PER POUND AUGUST 15 2024**
- **SAME AS JULY UP 1.5 CENTS FROM JUNE**
- UP 3.5 CENTS FROM A YEAR AGO (5.5 CENTS)
- DOWN 35.5 CENTS FROM JULY 2021 HIGH (44.5 CENTS)
- UP 6 CENTS OVER 2020 LOW (3 CENTS)
- UP 2.37 CENTS FROM PRE-COVID LOW (6.63 CENTS)
- 1.37 CENTS ABOVE NATIONAL AVERAGE (7.63 CENTS)
- NORMALLY TRACKS ABOVE NATIONAL AVERAGE

MARKETS MOSTLY DURABLE PLASTICS FOR NON-CONSTRUCTION USES

- STORAGE CONTAINERS, PAINT CANS, TOYS, BOTTLE CAPS, CAR BATTERY CASES, CARPET FIBER, PACKAGES, ETC.
- PLASTICS NEWS ECONOMIST "A PLASTIC RECESSION" DURABLE GOODS IN PARTICULAR

HIGH-LOW –

- *ALL TIME LOW MAY 8 2020 \$0.3 & PRE COVID LOW 6.63 CENTS JUNE 2017*
- *HIGH JULY 2021 \$0.445*

New Plastic Recycled Content Capacity: 2024 & On

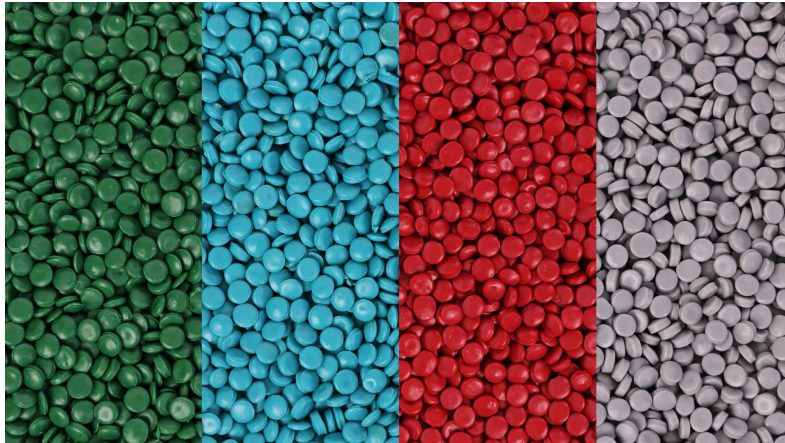


PHOTO EFS PELLETS MADE BY EFS FROM MIXED PLASTICS

PLASTIC RECYCLING CAPACITY HAS INCREASED

- HARDER TO TRACK THAN PAPER B/C LESS COSTLY & LESS PUBLICIZED
- SUPPLY BIGGEST PROBLEM

New Plastic Recycled Content Capacity: 2024 & On

Plastics:

- EFS Hazelton, PA facility adding processing capacity Q3
- KW opening new wash line with 100 million pound capacity PP & PE: operational August/September
- Circularix Ocala, FL facility to open new PET facility first half 2024
- Eastman expects full production at Kingsport, TN PET facility second half of 2024
- Eastman second molecular recycling PET facility to open in Longview, TX, 2026/2027
- Kal-Polymers expanding PE & PET processing in GA & ON first half 2024
- Brightmark Thomaston, GA, breaking ground 2025 and open 2027
- Republic Services Indianapolis, IN plastics processing facility to open in Q4
- Circularix announced supply agreement with Republic
- Eastman announced supply agreement with Rumpke
- Myplas Rogers, MN, facility opened Dec. 2023, closed for downtime, March, 2024, reopening?
- Purecycle, OH, operating again

EFS ANNOUNCED AN EXPANSION OF ITS HAZELTON PA FACILITY

- THE FACILITY RECYCLES FLEXIBLE PASTICS
- THE EXPANSION IS AIMED AT IMPROVING SORTING SO THAT IT CAN PURCHASE LOWER-GRADE FILM ENVISION: <https://resource-recycling.com/plastics/2023/11/28/reclaimer-finishes-food-grade-pcr-expansion/>

KW BUYING PP & PE FOR NEW WASH LINE

ENVISION ANNOUNCED 50% INCREASE IN CAPACITY FOR FOOD GRADE PE & PP AT NC

FACILITYEASTMAN: https://www.news-journal.com/news/local/historical-investment-eastman-chooses-longview-for-new-manufacturing-facility/article_c803c1d6-eab6-11ee-83b0-7bc67b3c2121.html

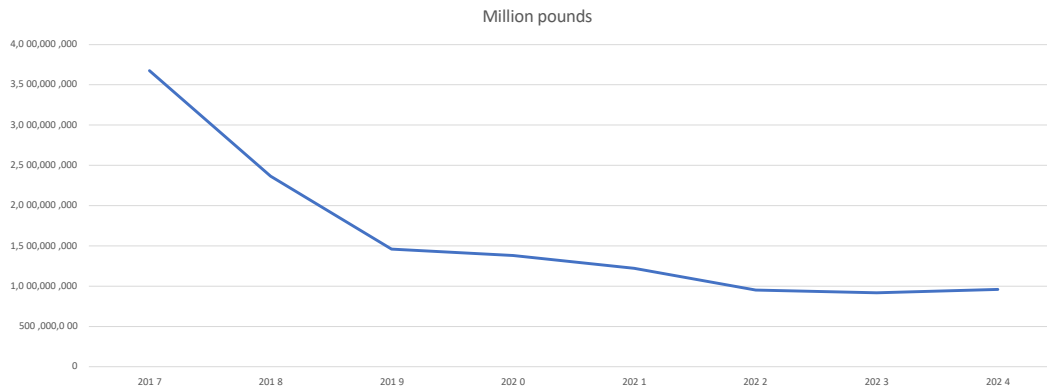
KAL-POLYMERS: <https://www.plasticsnews.com/news/kal-polymers-adding-recycling-capacity-two-countries>

- 15 MILLION POUNDS GA & 35 MILLION POUNDS ON: 2/3 PP TOTAL K-P PRODUCTION
- MYPLAS: <https://www.startribune.com/minnesotas-first-plastic-film-recycling-facility-struggling-just-two-months-after-opening/600345027/#:~:text=Minnesota%27s%20first%20plastic%20film%20recycling,operational%20changes%22%20to%20resume%20production.>

- PRESS ARTICLE IMPLIES LACK OF MARKETS
- MAY 30: SHUTTERED MYPLAS FILM RECYCLING PLANT COULD SEE NEW LIFE: PLASTICS NEWS: <https://www.plasticsnews.com/news/shuttered-myplas-film-recycling-plant-could-see-new-life>

IT'S ALL ABOUT SUPPLY

Recycled Plastics Exports 2017 – 2024 (Projected from H1)



EXPORT DATA RESOURCE RECYCLING, MAY 5, 2024

EXPORTS DROPPED 75% SINCE 2017 WHEN MORE THAN 3.7 BILLION POUNDS WERE EXPORTED

PLASTICS 2023:

- 918 MILLION POUNDS
- A 3.5% DECLINE FROM 2022
- PET & HDPE EXPORTS HAVE BEEN DECLINING FOR OVER A DECADE

PLASTICS 2024:

- Q1& 2 481 MILLION POUNDS
- PROJECTED 962 MILLION POUNDS

WHY?

- CHINA CAUSED THE IMMEDIATE DROP
- INCREASED DOMESTIC DEMAND CAUSED THE MORE RECENT DECLINES
- CANADA & MEXICO GET 55% MALAYSIA & INDIA ARE THE TWO LARGEST ASIAN IMPORTERS

MIXED PLASTICS & POLYETHYLENE GRADES ARE EACH 37% OF THE EXPORTS (Q1 DATA)

- PRIMARILY FILM & NON-BOTTLE RIGIDS

US BECAME A NET IMPORTER OF RECYCLED PLASTIC IN 2023

Market Drivers Recycled Plastics

Recycled plastic no longer less expensive than virgin

- Too much virgin resin, domestic off-spec resin & cheap recycled resin imports
- US became net recycled plastic importer in 2023

Seasonal beverage consumption pushing up PET prices

Single family housing starts down 14.8% YOY% (July)

- Five unit or more project starts up 11.7% YOY
- Overall starts down 6.8% – lowest since May 2020

Consumer spending on goods soft

- Durable goods “Plastics recession”?
- Consumer spending on durables goods down Q1 up Q2
- Electronics & appliance store sales up 5.2% YOY (July)

Hurricane season off to intense start

NET IMPORTER: <https://www.recyclingtoday.com/article/economics-pcr-goals-may-not-mesh/>

HOUSING STARTS: <https://www.reuters.com/markets/us/us-single-family-housing-starts-permits-fall-april-2024-05-16/> HIGHER MORTGAGE RATES ARE SLOWING NEW HOUSING

CONSTRUCTION: <https://www.census.gov/construction/c30/current/index.html>

RESIN PRODUCTION ACC JULY 31

DURABLE GOODS SPENDING UP & DOWN

HURRICANE SEASON PREDICTED TO BE INTENSE

- <https://finance.yahoo.com/news/texas-ports-brace-predicted-above-110000158.html>
- HURRICANE SEASON & IMPACT ON GULF COAST PETROCHEMICAL PLANTS (HALF US PRODUCTION?)

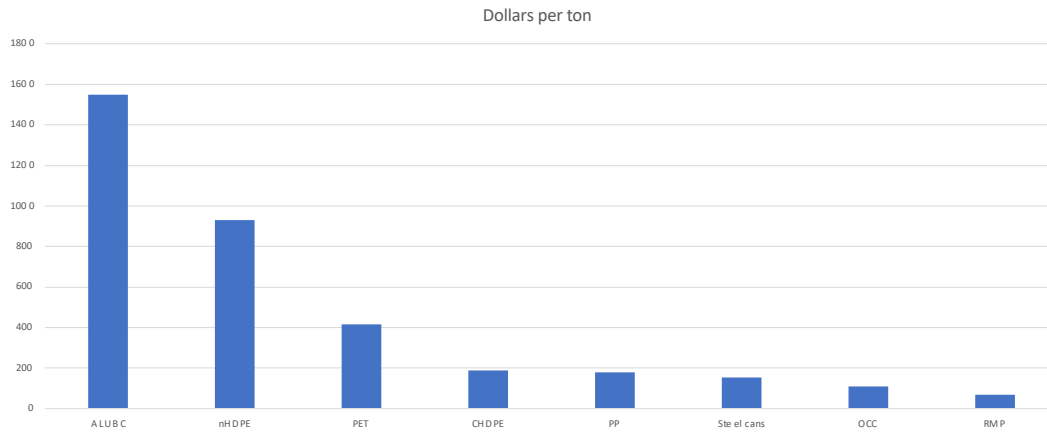
BRENT CRUDE AT \$80.83 AUG 15 VS \$82.63 JULY 15– 12 MONTH SPREAD \$72.29 – 97.69

<https://markets.businessinsider.com/commodities/oil-price>

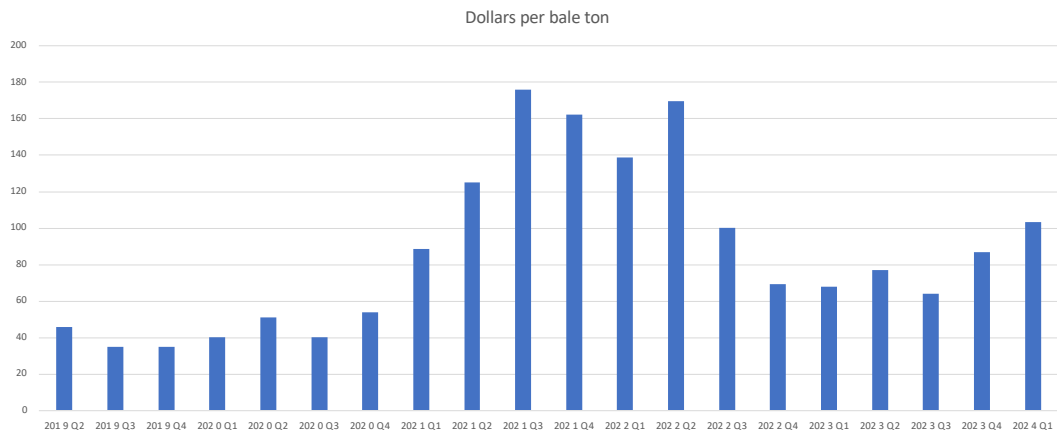
HENRY HUB AT \$2.26 AUG 15 VS \$2.13 JULY 15 - 12 MONTH SPREAD \$1.48 – \$3.63

- <https://markets.businessinsider.com/commodities/natural-gas-price>

Northeast MRF Per Ton Value Eight Curbside Recyclables August 2024



NERC MRF “Average Bale Ton” Value With Residue Costs Q2 2019 – Q1 2024



NERC HAS BEEN TRACKING THE AVERAGE VALUE OF A TON OF MRF RECYCABLES SINCE 2019

Q1 \$103.15 PER TON WITH THE COSTS OF RESIDUE

- UP \$16.44 FROM 2023Q4 (\$86.71)
- UP \$68.30 FROM THE Q3 2019 LOW (\$34.85)
- DOWN \$72.80 FROM THE Q3 2021 HIGH (\$175.95)

PAPER IS THE LARGEST COMPONENT OF THE MRF BALE.

- ON A PER TON BASIS, IT IS A TORTOISE COMPARED TO THE ALUMINUM & NHDPE HARES
- ON A PERCENTAGE OF TOTAL REVENUE IT IS NO TORTOISE
- ITS INCREASES THROUGHOUT 2023 & 2024 HAVE PROVIDED A STRONG BASE FOR MRG BALE VALUES

Where Are Markets Headed?



IT'S ALL ABOUT THE ECONOMY

WHERE IS IT GOING?

WHY DIDN'T MY ECON 101 CLASS EVER MENTION THE IMPACT OF A PANDEMIC ON THE ECONOMY?

- WE'RE STILL FIGURING THAT ONE OUT

Where Is The Economy Going?

Economy in a soft landing??

- Inflation easing, GDP growth up, jobs growth slowing, unemployment up, wage growth up but slowing, weekly jobs claims highest point since 2021, credit card delinquencies up, personal savings rate at lowest point since 2022, household debt up, retail sales up, unit sales?
- ISM manufacturing activity 46.5 down from 48.5 in June
- ISM new orders index 47.4 down from 49.3 in June
- ISM services index 51.4 up from 48.8 in June
- **Consumer** sentiment 66.4 down from 68.1 in June

- Consumer spending tightening
- Unit sales: brands reporting increases
- Stores cutting prices to increase sales
- Walmart Q2 retail sales up while announcing 7200 additional price cuts
- Consumers simply switching to less expensive products or different stores & not buying more?

ISM: <https://www.ismworld.org/supply-management-news-and-reports/reports/ism-report-on-business/pmi/july/>

- “U.S. MANUFACTURING ACTIVITY ENTERED DEEPER INTO CONTRACTION”
- “DEMAND REMAINS SUBDUED, AS COMPANIES SHOW AN UNWILLINGNESS TO INVEST IN CAPITAL & INVENTORY DUE TO CURRENT FEDERAL MONETARY POLICY & OTHER CONDITIONS.”
- SERVICE SECTOR EXPANDING – 47TH MONTH IN EXPANSION IN THE LAST 50 MONTHS

LOGISTICS: <https://www.the-lmi.com/july-2024-logistics-managers-index.html>

- 8th STRAIGHT MONTH OF EXPANSION – 45.4 IN JULY ‘23 (LOWEST IN 8 YEAR HISTORY OF LMI BUT STILL BELOW ALL TIME AVERAGE OF 61.9
- RETAILERS SEEM TO BE KEEPING INVENTORIES LEANWHILE MANUFACTURERS & WHOLESALERS ARE BUILDING UP GOODS IN ANTICIPATION OF HIGHER DEMAND LATER THIS YEAR.

MICHIGAN CONSUMER CONFIDENCE: <http://www.sca.isr.umich.edu>

- “CONSUMER SENTIMENT HAS REMAINED VIRTUALLY UNCHANGED IN THE LAST THREE MONTHS”
- “IT REMAINS GUARDED AS HIGH PRICES CONTINUE TO DRAG DOWN ATTITUDES, PARTIULARLY FOR THOSE WITH LOWER INCOMES”
- “CONTINUED UNCERTAINTY IS LIKELY TO GENERATE VOLATILITY IN ECONOMIC ATTITUDES IN THE MONTHS AHEAD”

UNIT SALES: https://www.wsj.com/economy/consumers/why-cheap-toilet-paper-sets-off-alarm-bells-among-some-investors-c467c167?mod=itp_ws

CUTTING PRICES: <https://www.marketplace.org/2024/05/23/major-retailers-lower-prices-as-competition-heats-up/> & <https://www.washingtonpost.com/business/2024/05/24/grocery-prices-falling/>

Markets Beyond July

Paper:

- Price strong but flat – drop is inevitable but when?
- Back to school days & Halloween impact over but end of year holiday box demand ongoing

Plastic:

- PET benefitting from seasonal increase in beverage sales
- nHDPE benefitting from increased brand demand to meet goals (?)
- cHDPE hurt by declining housing starts
- PP benefitting from soon-to-open wash line at KW

PAPER DRIVEN BY NEW DEMAND & TIGHT SUPPLY

- PRICES WELL ABOVE PRE-COVID
- OCC & RMP FLAT
- FLAT IMPORTS NEGATIVE IMPACT ON PRICES

PLASTIC

- NHDPE CONTINUE RISE ABOVE PRE-COVID DEPTHS BUT NO WHERE NEAR 21/22 HIGHS
- COLORED HDPE HURTING FROM CONSTRUCTION SLOWDOWN
- PET SEASONAL INCREASE WILL SLOW IN AUGUST
- PP INCREASE DRIVEN BY NEW SOON-TO-OPEN WASH LINE AT KW

TRENDS TO WATCH

- CONSUMER SPENDING & CREDIT CARD BALANCES

Markets Beyond July

Metal:

- Aluminum likely to go down at end of month in anticipation of less need in the fall from beverage markets
- Steel likely to go down due to imports & slower construction

Glass:

- Impact of declining beverage sales leads to lower demand

METAL PRICES SOLID

- ALUMINUM & STEEL WELL ABOVE PRE-COVID
- SEASONAL FOR ALUMINUM CANS
- CONSTRUCTION DEPENDENT FOR STEEL CANS
- BOTH LIKELY TO SOFTEN

Final Thoughts on Market Trends

Modestly optimistic

- Paper demand is good
- Plastics slowly improving
- Metals normal for aluminum, soft for steel
- Glass flat

MARKETS LOOKING A BETTER THAN IN JUNE

PAPER & ALUMINUM ARE FLAT BUT STRONG PRICES

NHDPE, PET & PP ARE RISING PET & NHDPE ARE GOOD PRICES

STEEL & CHDPE ARE FALLING

Good Reads

Europe paper exports rose in 2023

- Recycling Today, July 9

Amazon Prime Day boosts US online sales to record \$14.2 Billion, Adobe Says

- Reuters, July 18

Mohawk's RPET consumption flat in 2023

- July 24, Plastics Recycling Update

America's Post-Covid Factory Boom Is Running Out of Steam

- Wall Street Journal, July 29

After Years of Raising Prices, Food Companies Hit Consumers' Limits

- Wall Street Journal, July 31

Manufacturing PMI At 46.8%

- August 1, ISM

Wait & See (printed paper market trends)

- Recycling Today, August issue

Sources Include

Marketplace: <https://www.marketplace.org>

NERC Recycled Paper Demand Increases March 2022 Update
<https://nerc.org/documents/Summary%20of%20Announced%20Increased%20Capacity%20to%20use%20Recycled%20Paper%20Updated%20March%202022.pdf>

Packaging Dive: <https://www.packagingdive.com>

Paper: Moore & Associates: Bill Moore: www.marecycle.com

Paper: RISI: Hannah Zhao: www.risiinfo.com

Plastic: Stina: Nina Belluci Butler: www.stinainc.com

Plastics News: <https://www.plasticsnews.com>

Recycling Markets.net: Christina Boulanger-Bosley: www.recyclingmarket.net

Resource Recycling Magazine & weekly Resource Recycling & Plastic Recycling Update e-news: resource-recycling.com/recycling/magazine/

Waste360: <https://www.waste360.com>

Waste Dive: <https://www.wastedive.com>

THESE COMPANIES & PUBLICATIONS ARE EXCELLENT SOURCES OF
INFORMATION ABOUT MARKET TRENDS

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