

NORTHEAST RECYCLING MARKETS MAY 2024

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Maryland EPR Advisory Council
May 30, 2024

ALL PRICES AS OF MAY 30, 2024

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

- COVERS ALL CURBSIDE RECYCLABLES
- MRF SELLING PRICE

SPEAKER NOTES HAVE A WEALTH OF CONTENT THAT SUPPLEMENT THE SLIDES.

- A PDF OF THE SLIDES & SPEAKER NOTES WILL BE AVAILABLE FROM MDE & MYSELF AFTER THE MEETING
- SO DON'T WORRY ABOUT TAKING EXTENSIVE NOTES.

WHAT ARE THESE & WHERE DO THEY GO?



MONTGOMERY COUNTY DEP

RECYCLABLES ARE SIMPLY RAW MATERIALS LOOKING FOR BUYERS

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*

KEY RECYCLING MARKET FACTORS

Vary by material

Commodities: prices fluctuate

The state of the economy today

Purchasing agents belief in where the economy is going

Product unit sales

Housing & infrastructure construction

VARY BY MATERIAL

- PAPER INDUSTRY & MARKETS DIFFERENT THAN PLASTICS, ETC.

ALL ARE COMMODITIES SUBJECT TO CHANGING PRICES

THE STRENGTH OF WEAKNESS OF THE NATIONAL & GLOBAL ECONOMY

PURCHASING AGENTS FORECAST OF THE AMOUNT OF RAW MATERIALS THEY WILL NEED

- MORE LESS, THE SAME?
- OFTEN 30 – 60 DAYS DOWN THE ROAD

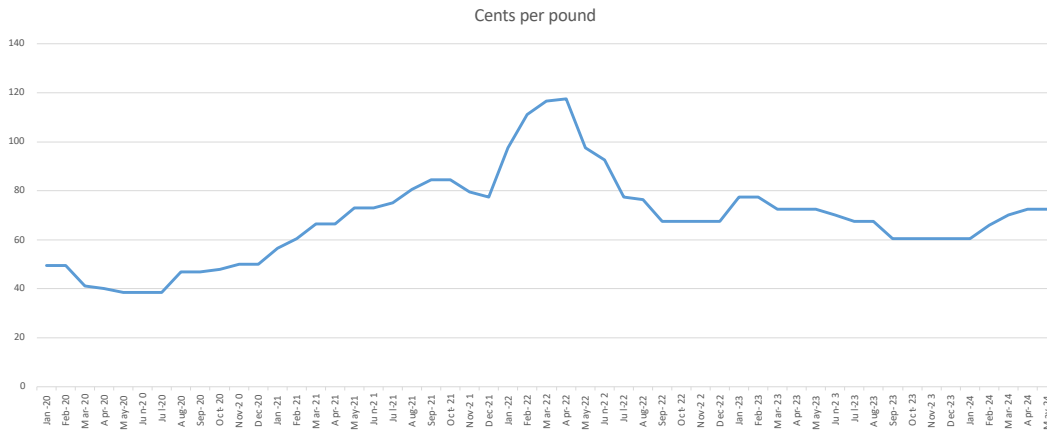
OFTEN A FUNCTION OF UNIT PRODUCT SALES

- UNIT SALES UP, NEED MORE RAW MATERIALS FOR PACKAGE, BOX TO SHIP THE PRODUCT IN, ETC.
- DOWN THE OPPOSITE

HOUSING & INFRASTRUCTURE CONSTRUCTION ALSO IMPORTANT

- MANY RECYCLABLES END UP IN CONSTRUCTION-RELATED PRODUCTS

ALUMINUM CANS NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

ALUMINUM GOING UP

- **72.5 CENTS PER POUND**
- **SAME AS LAST MONTH**
- SAME YOY (72.5 CENTS)
- DOWN 42 CENTS FROM MAR 11 2022 HIGH (117.5 CENTS)
- UP 33.37 CENTS FROM 2020 LOW (39.13 CENTS)
- 2.69 CENTS ABOVE NATIONAL AVERAGE (69.81 CENTS)
- NORMALLY 2 OR 3 CENTS ABOVE NATIONAL AVERAGE

MARKET: CANS

- NORMALLY A SEASONAL MARKET RISING TWO MONTHS BEFORE MEMORIAL DAY & FALLING IN MIDSUMMER
 - BEER SALES DECLINING: CONSUMPTION AT LOWEST LEVEL IN 25 YEARS
 - NON-ALCOHOLIC BEVERAGE CAN SALES RISING BUT STILL SMALL MARKET COMPARED TO ALCOHOLIC
 - 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

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
- MRF SEPARATION 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%

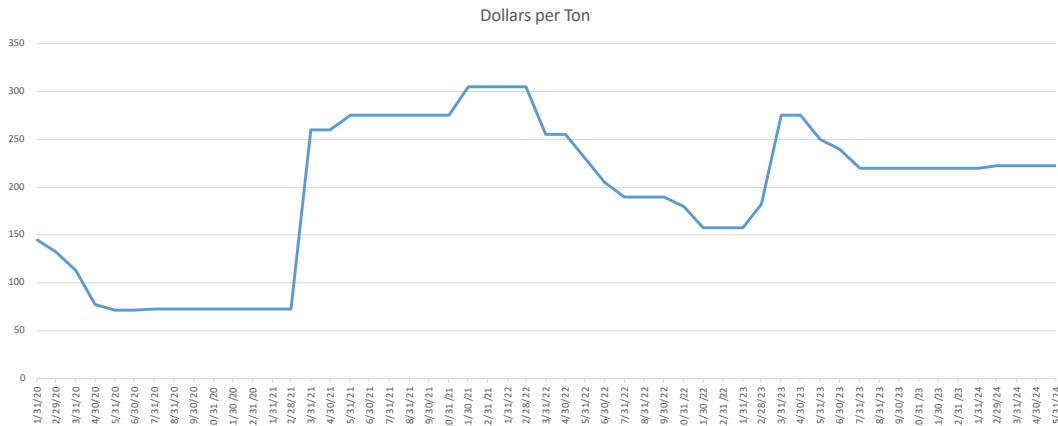
EPA DATA FOR 2018 (MOST RECENT):

- 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)

STEEL CANS NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

STEEL

- **\$222.50 PER TON**
- **SAME AS LAST MONTH**
- DOWN \$52.50 YOY (\$275)
- DOWN \$82.50 FROM ALL TIME HIGH (\$305)
- UP \$151.50 SINCE 2020 LOW (\$71.50)
- \$7.81 ABOVE NATIONAL AVERAGE (\$214.69)
- VARIES ABOVE OR BELOW NATIONAL AVERAGE

MARKET ELECTRIC ARC FURNACES

- 70% US PRODUCTION IS EAF WHICH RELIES ON SCRAP
- INFRASTRUCTURE & COMMERCIAL BUILDING CONSTRUCTION MAJOR MARKET DRIVERS
- EAF INDUSTRY BULLISH ON IMPACT OF INFRASTRUCTURE ACT

HIGH : NOV 21 – FEB 22 \$305

LOW: WINTER 2015: \$35

STEEL



STEEL FABRICATION SERVICES

WHERE DO THEY GO?

STEEL CANS CAN BE MADE INTO ANY STEEL PRODUCT

- 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

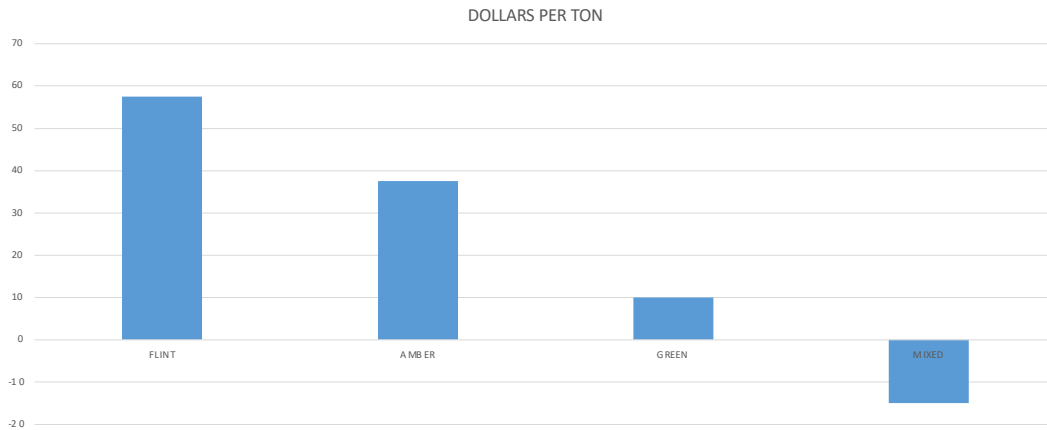
STEEL RECYCLING RATE 2018 EPA DATA:

- 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>

GLASS NORTHEAST MAY 2024



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

PRICES RARELY CHANGE:

- FLINT & MIXED TWICE SINCE JAN 2020
- BROWN & GREEN ONCE

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

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>

MIXED GLASS CULLET

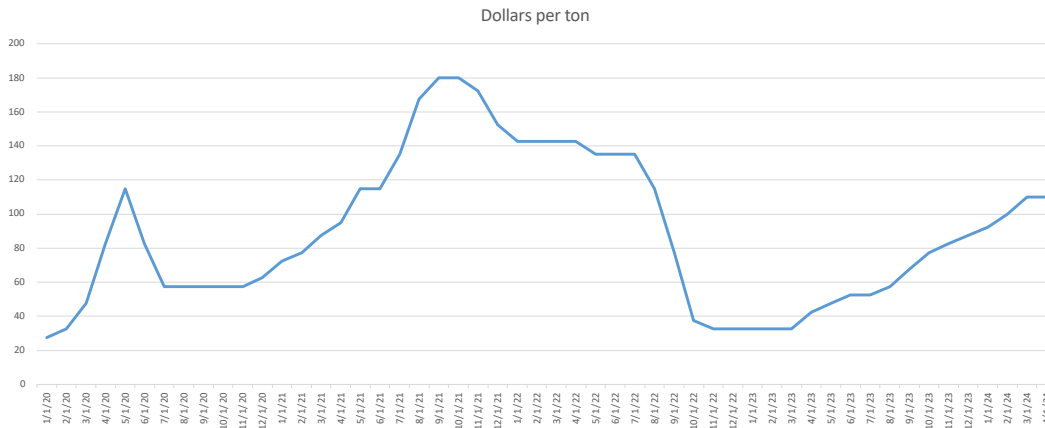


CAP GLASS

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.

OCC (CORRUGATED CONTAINERS) NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

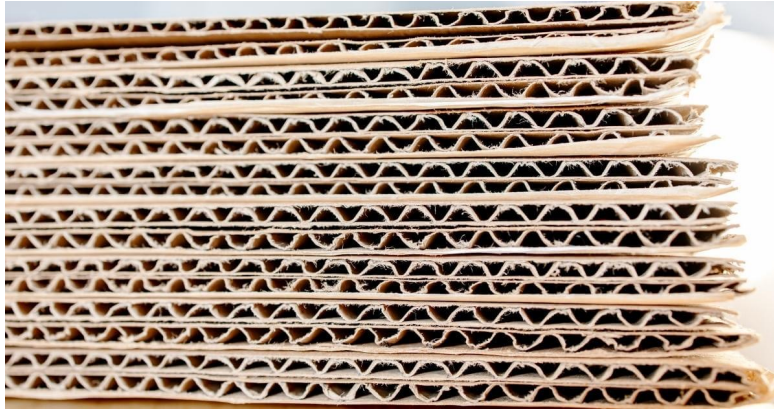
OCC

- **\$110 PER TON**
- **SAME AS LAST MONTH**
- UP \$62.50 YOY (\$47.50)
- DOWN \$70 FROM SEPTEMBER-OCTOBER 2021 HIGH (\$180)
- \$82.50 ABOVE THE 2020 LOW (\$27.50)
- \$6.37 OVER NATIONAL AVERAGE (\$103.63)
- AHEAD NATIONAL AVERAGE EVERY MONTH SINCE JAN 21 EXCEPT LAST OCT

MARKETS PRIMARILY LINERBOARD OR CORRUGATED MEDIUM

- RAW MATERIALS FOR BOXES
- SOFT SHIPPING & PACKAGE BOX DEMAND AS PRODUCT UNIT SALES ARE DOWN
- *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**

LINERBOARD & CORRUGATED MEDIUM: BOXES



BAY CITIES PACKAGING & DESIGN

WHERE THEY GO

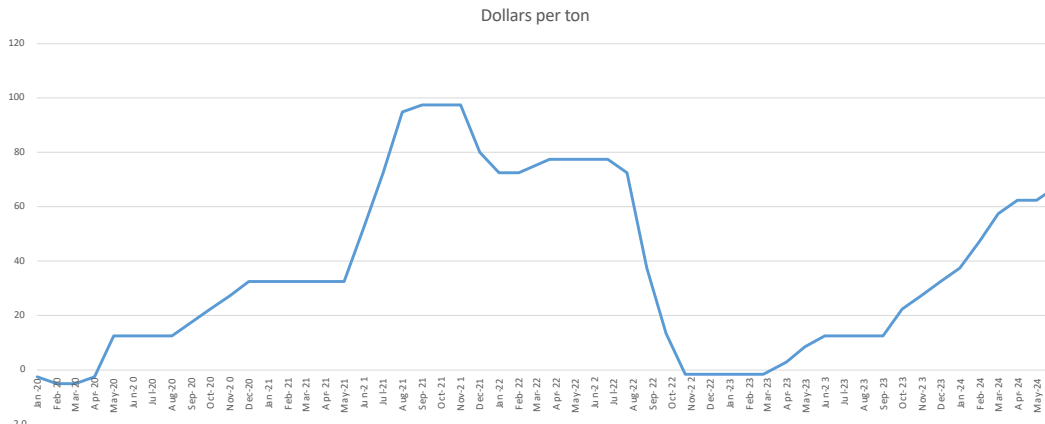
CORRUGATED BOXES ARE MADE BACK INTO BOXES

- 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

RMP (MIXED PAPERS) NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

RMP:

- **\$67.50 PER TON**
- **UP \$5 FROM LAST MONTH (\$62.50)**
- UP \$55.00 YOY (\$12.50)
- DOWN \$350 FROM SEPTEMBER-NOVEMBER 2021 HIGH (\$97.50)
- UP \$67.50 OVER 2020 LOW (-\$5)
- 63 CENTS BELOW NATIONAL AVERAGE (\$68.13)
- USUALLY ABOVE NATIONAL AVERAGE **BUT** BELOW LAST WINTER & NOW
- RISES & FALLS AT A DISCOUNT TO OCC
- SPREAD B/W OCC & RMP IS \$42.50 SIGNALING MORE 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
- *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*

MIXED PAPER VARIETY

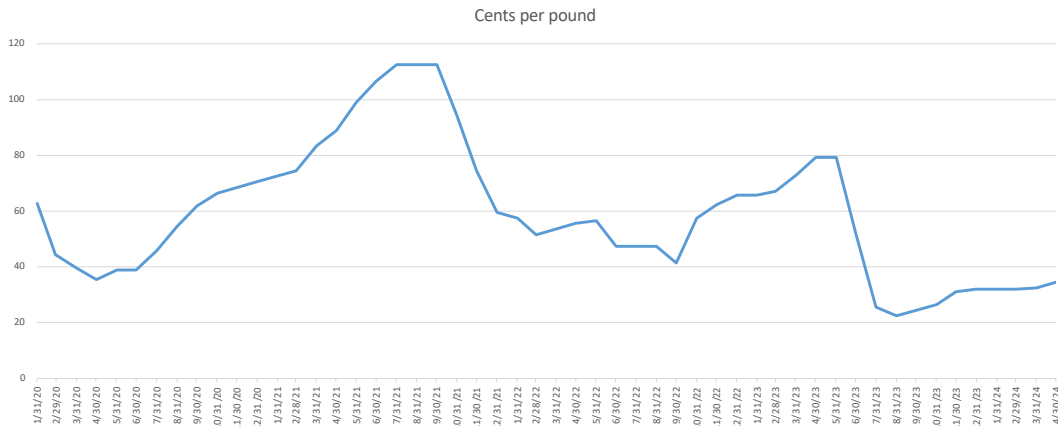


ROGUE DISPOSAL & RECYCLING

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

nHDPE NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

NATURAL HDPE

- **35.5 CENTS PER POUND**
- **UP 1 CENT FROM LAST MONTH (34.5 CENTS)**
- **DOWN 43.75 CENTS YOY (79.25 CENTS)**
- **DOWN 77 CENTS SINCE JUL - OCT 21 HIGH (112.5 CENTS)**
- **SAME AS PREVIOUS 2020 LOW OF 35.5 CENTS**
- **UP 22.5 CENTS FROM ALLTIME LOW (13 CENTS)**
- **2.91 CENTS ABOVE NATIONAL AVERAGE (32.59 CENTS)**
- **NORMALLY ABOVE NATIONAL AVERAGE, SOMETIMES BY AS MUCH AS A NICKEL**

MARKETS PACKAGING & SOME CONSTRUCTION

- **HIGHLY VERSATILE B/C NOT DYED**
- **USED IN LIMITED NUMBER OF PRODUCTS (MILK & WASTER JUGS, FRUIT JUICES)**
- **BRAND DEMAND DROVE 2021 HIGH.**
- **VIRGIN RESIN PRICES LOW, EXCESS OFF & WIDE SPEC PRE-CONSUMER RESIN**

HIGH – 112.5 CENTS – JUL – OCT 2021

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

Color HDPE bottles

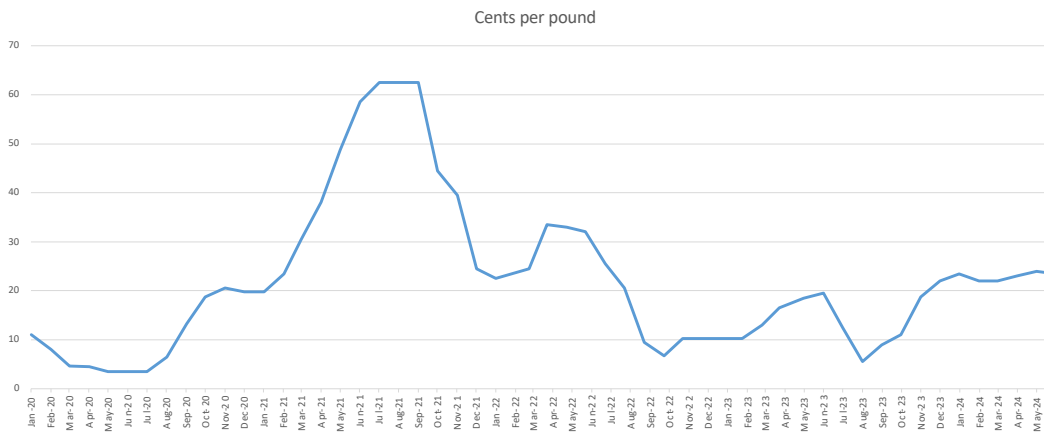


MJS PACKAGING

NATURAL HDPE RESIN CAN BE DYED ANY COLOR

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

cHDPE NORTHEAST JANUARY 2020 – MAY 2024



**DATA: RECYCLING MARKETS.NET
COLORED HDPE**

- **23.5 CENTS PER POUND**
- **DOWN ONE HALF CENT FROM LAST MONTH (24 CENTS)**
- UP 4.25 CENTS YOY (19.25 CENTS)
- DOWN 39.5 CENTS FROM JULY-SEPTEMBER 2021 HIGH (62.5 CENTS)
- UP 20 CENTS FROM 2020 LOW (3.5 CENTS)
- 2.25 CENTS ABOVE NATIONAL AVERAGE (21.25 CENTS)
- NORMALLY ABOVE NATIONAL AVERAGE BY 3 OR 4 CENTS
- CHDPE 24% LESS THAN THE VALUE OF nHDPE – A NARROWER GAP THAN NORMAL

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 SALES & 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*

PIPE



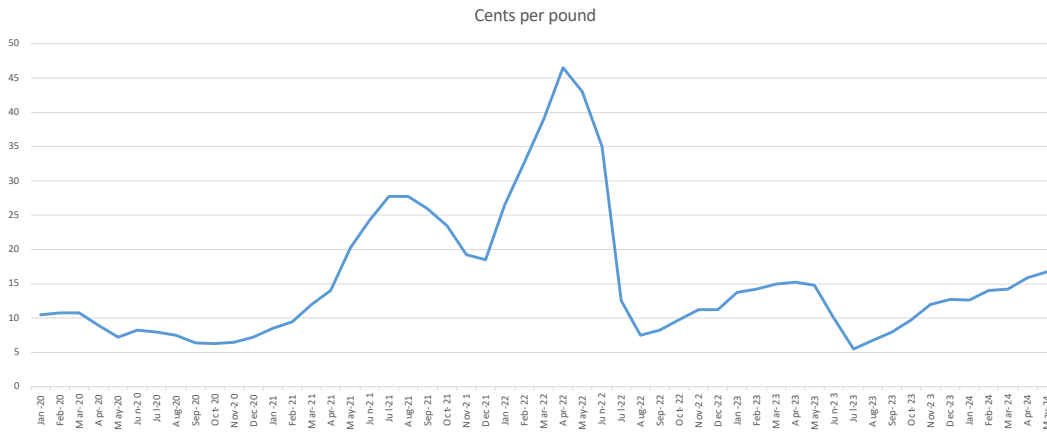
ADS

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
- INTERESTING CORRELATION B/W NEW HOME SALES & STARTS & CHDPE MARKETS

PET NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

- **16.75 CENTS PER POUND**
- **UP 0.82 CENTS FROM LAST MONTH (15.88 CENTS)**
- UP 2 CENTS FROM A YEAR AGO (14.75 CENTS)
- DOWN 29.88 CENTS SINCE ALL TIME HIGH (46.63 CENTS – MAY 22)
- UP 10.62 CENTS OVER 2020 BOTTOM (6.13 CENTS)
- 12.25 CENTS OVER ALL-TIME LOW (4 CENTS IN 2008)
- 1.56 CENTS ABOVE NATIONAL AVERAGE (15.19 CENTS)
- NORMALLY TRACKS A PENNY OR TWO ABOVE NATIONAL AVERAGE

MARKETS PRIMARILY BOTTLES & FIBER

- BEVERAGE INDUSTRY SALES SEASONAL: MEMORIAL DAY TO LABOR DAY:
- RPET MARKETS NORMALLY REFLECT THIS BUT OTHER MARKETS CAN IMPACT AS IN 22
- FIBER INDUSTRY CUTTING BACK DUE TO WEAK MARKETS

HIGH-LOW PRESENT TO 2005

- *PRE-COVID HIGH 2011: \$0.37 (GAS & OIL HIGH) POST 2020 MAY 22 – 46.63 CENTS*
- *LOW DEC 2008:- JAN 09 GREAT RECESSION: \$0.04 POST-COVID LOW \$0.0613 OCT 2020*

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 & 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>

FIBER PRODUCTS



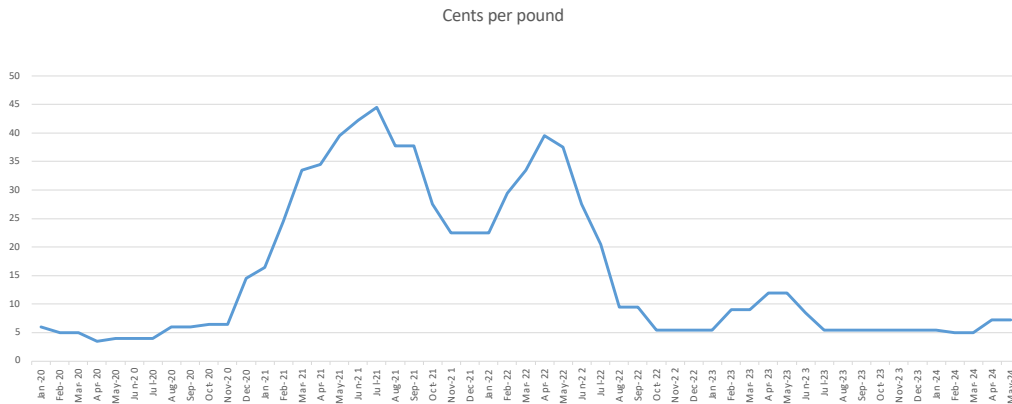
Floorsome

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

CARPETS & RUGS HAVE LOST SIGNIFICANT MARKET SHARE TO “HARD SURFACES”

- 67% IN 2007
- 45% IN 2022
- <https://www.fcnews.net/2023/06/carpet-stats-soft-surface-stagnates-in-2022/>

PP NORTHEAST JANUARY 2020 – MAY 2024



DATA: RECYCLING MARKETS.NET

POLYPROPYLENE

- **7.25 CENTS PER POUND**
- **SAME AS LAST MONTH**
- DOWN 4.75 CENTS FROM A YEAR AGO (12 CENTS)
- DOWN 37.25 CENTS FROM JULY 2021 HIGH (44.5 CENTS)
- UP 4.25 CENTS OVER 2020 LOW (3 CENTS)
- UP 0.62 CENTS FROM PRE-COVID LOW (6.63 CENTS)
- 1.15 CENTS ABOVE NATIONAL AVERAGE (6 CENTS)
- NORMALLY TRACKS ABOVE NATIONAL AVERAGE

MARKETS MOSTLY DURABLE PRODUCTS BUT ALSO SOME PACKAGES

- STORAGE CONTAINERS, PAINT CANS, TOYS, BOTTLE CAPS, CAR BATTERY CASES, CARPET FIBER, PACKAGES, ETC.
- DURABLE PLASTICS “RECESSION”

HIGH-LOW –

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

PAINT PAILS



KW PLASTICS

WHERE THEY GO

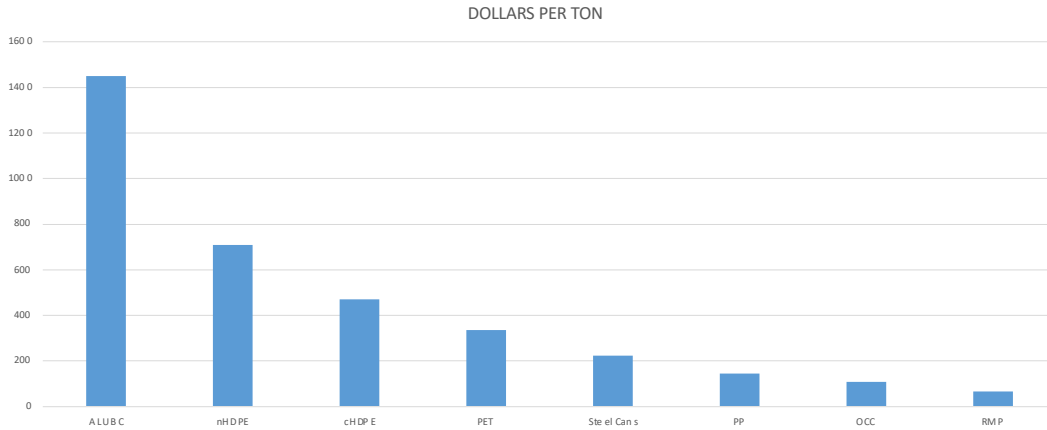
POLYPROPYLENE PACKAGING IS RECYCLED INTO PACKAGES OR A WIDE VARIETY OF DURABLE PLASTIC PRODUCTS SUCH AS TOYS, BATTERY CASES, GARDEN TOOLS, FIBER

- 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>

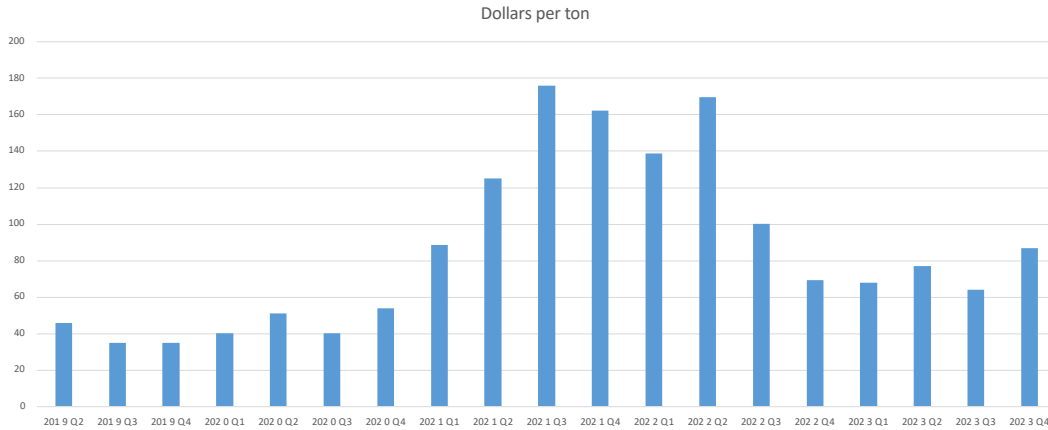
NORTHEAST PER TON VALUE EIGHT CURBSIDE RECYCLABLES MAY 2024



ALUMINUM CANS NORMALLY HAVE THE HIGHEST PER TON VALUE

PAPER PRODUCTS NORMALLY THE LOWEST PER TON VALUE

NERC MRF VALUE W/RESIDUE COST Q2 2019-Q4 2023



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

Q4 2023 \$86.71 WITH THE COSTS OF RESIDUE

- UP \$23.75 FROM Q3 LOW (\$63.95)
- UP \$51.86 FROM THE Q3 2019 (\$34.85)
- DOWN \$89.24 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 A MAJOR CONTRIBUTOR
- ITS INCREASES THROUGHOUT 2023 & 2024 PROVIDED A SOFT LANDING AS PLASTIC & METAL PRICES HAVE DECLINED

EXPORTS



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

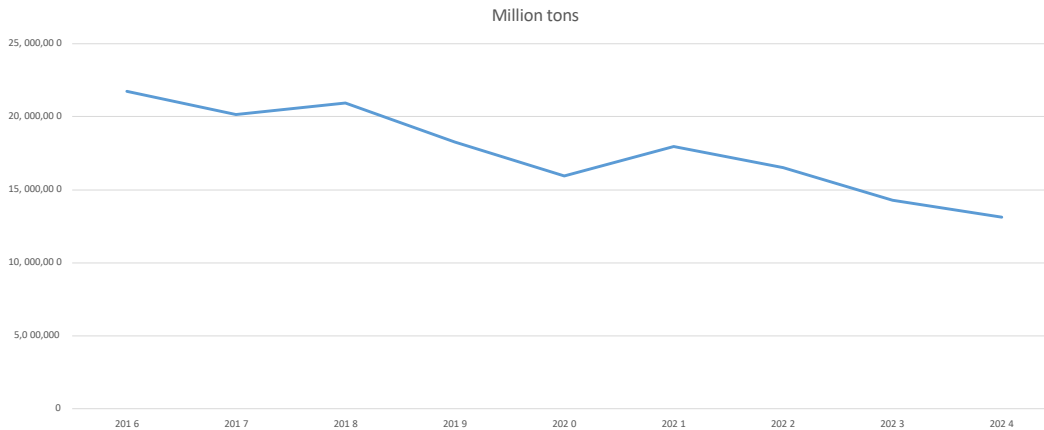
WHY DO WE EXPORT RECYCLABLES?

- 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 Q1)



SOURCE: RESOURCE RECYCLING, MAY 7, 2024

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%
- Q1 2024 3.28 MT FOR PROJECTED 13.12 MT 2024

- DOWN 17% Q1 2023
- LOWEST Q1 VOLUME SINCE 2002

CHINESE ECONOMY WEAK & DOMESTIC DEMAND IS UNDERCUTTING EXPORTS

- THAILAND, INDIA, MEXICO & MALAYSIA RECEIVE SLIGHTLY ALMOST 2/3
- IMPORTS TO INDIA DOWN 25% & MEXICO DOWN 14%
- EXPORTS TO MALAYSIA UP 62%
- 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
- COLLAPSE OF KEY BRIDGE CAUSING PROBLEMS IN MID-ATLANTIC AREA

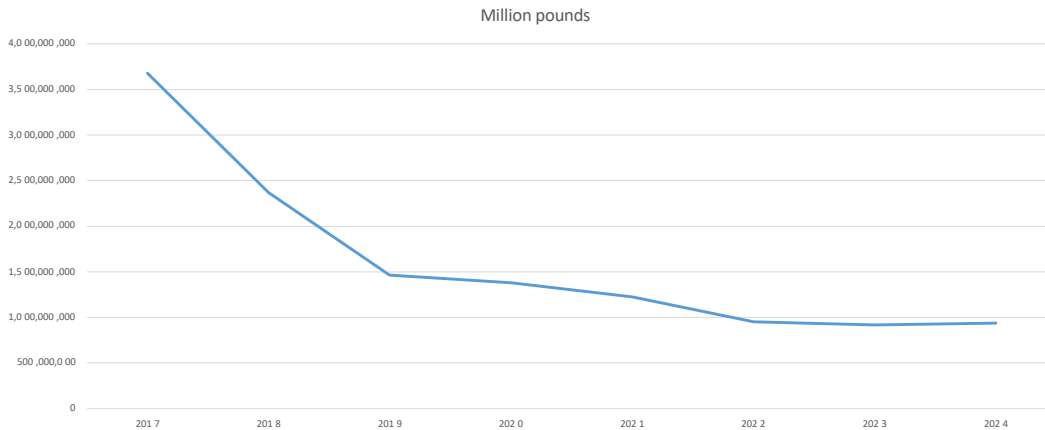
RECYCLED FIBER PULP EXPORTS COLLAPSED FROM 532,000 TONS IN 2022 TO 211,000 TONS 2023

- AVERAGING 4,000 TONS A MONTH 2024

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

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

RECYCLED PLASTIC EXPORTS 2017 – 2024 (projected from Q1)



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 234.6 MILLION POUNDS
- SAME AS Q1 2023
- PROJECTED 938.6 MILLION POUNDS

WHY?

- CHINA CAUSED THE IMMEDIATE DROP
- INCREASED DOMESTIC DEMAND CAUSED THE MORE RECENT DECLINES
- CANADA & MEXICO GET 56% AS BOTH COUNTRIES SLOWLY INCREASE THEIR EXPORT MARKET SHARE
- MALAYSIA & INDIA – THE TWO LARGEST ASIAN IMPORTERS GET 19%

MIXED PLASTICS & POLYETHYLENE GRADES ARE EACH 37% OF THE EXPORTS

- PRIMARILY FILM & NON-BOTTLE RIGIDS

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 A MACHINE,
CONVERTED A PRINTED PAPER MACHINE TO PACKAGING OR IS 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

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

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

- AVERAGING 4,000 TONS A MONTH 2024
- SEVERAL NINE DRAGONS EXPANSIONS INCLUDING RECYCLED PULP ON ECONOMIC DOWNTIME
- THE COMPANY DID NOT MAKE A PROFIT IN THE US IN 2023

NEW RECYCLED CONTENT CAPACITY: PLASTIC



BUSINESS WIRE EXXONMOBIL PRESS RELEASE

<https://www.businesswire.com/news/home/20221214005206/en/>

PLASTIC:

- **EXXONMOBIL BAYTOWN TX** ADVANCED RECYCLING FACILITY OPENED DEC 14
- USES “EXXTEND” TECHNOLOGY TO PROCESS UP TO **80 MILLION POUNDS OF SHREDDED** PREPROCESSED PLASTICS RANGING FROM SYNTHETIC ATHLETIC FIELDS TO BUBBLE WRAP TO MOTOR OIL BOTTLES **PLASTICS**
- PELLETS?

CIRCULARIX OPENED rPET PLANT IN HATFIELD, PA FEB

- 55 MILLION POUNDS OF PELLET ANNUAL CAPACITY
- OWNED BY FORMER OWNER OF CARBONLITE

ACI PLASTICS OPENED FACILITY IN FLINT MI FEB

- 24 MILLION POUNDS OF POST-CONSUMER PLASTIC FILM PER YEAR.
- FULL CAPACITY END OF YEAR

PURECYCLE OH JUNE

- SOLVENT RECOVERY FOR POLYPROPYLENE

EASTMAN TN DEC

- “MOLECULAR” RECYCLING FOR PET

ENVISION NC

- NEW HDPE PP LINES NC

STARTING TO SEE ANNOUNCEMENTS OF NEW FACILITIES OPENING

- **INSTEAD OF PRESS RELEASES ANNOUNCING NEW PROJECTS**

NEW PLASTIC RECYCLED CONTENT CAPACITY: 2024 & ON

PLASTICS:

- EFS Hazelton, PA facility added processing capacity Q1
- Circularix Ocala, FL facility to open first half 2024
- Republic Services Indianapolis, IN facility to open in Q3
- Eastman expects full production at Kingsport, TN facility second half of 2024
- Eastman second molecular facility to open in Longview, TX, 2026/2027
- Kal-Polymers expanding processing in GA & ON first half 2024
- Circularix announced supply agreement with Republic
- Eastman announced supply agreement with Rumpke
- Myplas Rogers, MN, facility opened Dec. 2023, closed for downtime, March, 2024

PRE 2024: SOME PROCESSING & END MARKET EXPANSIONS

- LARGE SCALE INCLUDE PURECYCLE IN OHIO FOR PP (2023)
- EXXON MOBILE CHEMICAL IN TX FOR WIDE VARIETY OF PLASTICS INCLUDING DURABLES
- EASTMAN IN TN FOR PET

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/>

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

EASTMAN: 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.>

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

WHERE ARE MARKETS HEADED?



THE TRADE NEWS

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 down slightly, job growth down, wage growth slowing, retail sales down April, warehouse vacancy rate up, trucking rates down
- ISM manufacturing activity 49.2 down from 50.3 in March
- ISM new orders index 49.1 in April down from 51.4 in March
- Consumer sentiment 77.2 down from 79.4 in March
- Consumer spending tightening
- Increased grocery prices driving down unit sales: 2% decline in volume April 24 YOY
- "Excess pandemic savings gone"

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

EXPECTS MANUFACTURING ABOVE 50 BY APRIL

- EARLY RECOVERY INDICATORS AS BAD NEWS SLOWS DOWN & HOUSING STARTS INCREASE?

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

- "CONSUMER SENTIMENT CONTINUED TO PLATEAU AND WAS VIRTUALLY UNCHANGED FOR THE THIRD MONTH IN A ROW. "

BUT https://www.wsj.com/economy/consumers/whats-wrong-with-the-economy-its-you-not-the-data-cfa911e6?mod=hp_lead_pos2 WHAT'S WRONG WITH THE ECONOMY? IT'S YOU, NOT THE DATA

CONSTRUCTION DATA:

- FEB data: <https://www.marketplace.org/2024/03/19/single-family-home-construction-is-booming-despite-higher-mortgage-rates/>

UNIT SALES: https://www.wsj.com/business/retail/inflation-food-price-of-groceries-2024-5010700b?mod=itp_wsj HOW FAR \$100 GOES AT THE GROCERY STORE AFTER FIVE YEARS OF FOOD INFLATION

THE ECONOMIC SLOWDOWN IS FINALLY HERE. WELCOME IT <https://www.wsj.com/economy/central-banking/us-economy-slows-possible-fed-rate-cuts-2699de55>

MARKETPLACE: AMERICANS HAVE BLOWN THROUGH EXCESS PANDEMIC SAVINGS. WHAT DOES THAT MEAN FOR THE ECONOMY?

- https://www.marketplace.org/2024/05/08/americans-have-blown-through-excess-pandemic-savings-what-does-that-mean-for-the-economy/?utm_campaign=MPD_20240508&utm_medium=email&utm_source=sfmc&utm_content=&utm_term=219878168

RECYCLED PAPER MARKET DRIVERS

Demand “strong”:

- New 2023 capacity aggressively competing for OCC, RMP
- With one exception, all new 2022-2024 capacity east of Mississippi

Supply weak:

- Lower product sales mean retail stores generating less OCC
- Residential supply not stepping up

Wildcards:

- Export markets soft
- Overall box production down
- 2023 box shipments down 5% yoy
- Box shipments down 1.1% Q1 2024 YOY
- This forces older (and some new) capacity mills to take “economic downtime”

AF&PA DATA APRIL 26 Q1 CONTAINERBOARD REPORT

FBA DATA: INTERNATIONAL PAPER TO RAISE FIBER PRODUCT PRICES AGAIN, OTHERS LIKELY TO FOLLOW, ANALYSTS SAY

- Packaging Dive

Q4 ECOMMERCE SALES AS PERCENTAGE OF OVERALL RETAIL SALES

- 15.6% SHARE OF RETAIL SALES (ADJUSTED FOR SEASONAL VARIATION)
- HIGHER THAN PREVIOUS RECORD OF 16.9 IN Q42020
- 17.1% SHARE UNADJUSTED
- UNADJUSTED IS ALWAYS HIGHEST IN THE FOURTH QUARTER
- HOWEVER, HIGHEST WAS 16.8 IN Q32020
- <https://www.census.gov/retail/ecommerce.html>
- How Online Shopping Is Saving the Bricks-and-Mortar Store

https://www.wsj.com/business/retail/online-shopping-brick-mortar-stores-d7232016?mod=itp_wsj

RECYCLED PLASTICS MARKET DRIVERS

Recycled plastic no longer less expensive than virgin

- Too much virgin resin being produced
- Too much cheap recycled resin imports & domestic off-spec resin
- PET PE & PP virgin resin prices rising

Seasonal markets including beverage consumption and construction

- Housing starts up 5.7% in April but down 0.6% YOY
- Single-family starts remain above one million for the sixth consecutive month
- Housing construction permits for privately-owned housing down 3% in April and down 2% YOY

Consumer spending on goods soft

- Durable goods “Plastics recession”

EUROPEAN RECYCLED RESIN PRICES ON THE RISE

- https://www.plasticsnews.com/resin-pricing/european-recycled-resin-prices-continue-climb?utm_source=pn-daily-report&utm_medium=email&utm_campaign=20240404&utm_content=article3-headline

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

DURABLE GOODS ALMOST EQUAL PRODUCTION AS PACKAGING

BRENT CRUDE AT \$83.49 MAY 28 VS \$89.11 Apr 7– 12 MONTH SPREAD \$71.39 – 97.69

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

HENRY HUB AT \$2.52 MAY 28\$1.75 APR 7 - 12 MONTH SPREAD \$1.48 – \$3.63

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

MARKETS BEYOND MAY

Paper price peaked? – when will it drop?

Plastic prices slowly rising

Metal prices solid but aluminum seasonal & steel dependent on construction

Trends to watch:

- Consumers cutting back on spending due to inflation
- Dwindling savings
- Will housing construction pick up?

Wildcards:

- Impact of Mexico surpassing China as the biggest exporter to US.
- Hurricane season
- Ukraine & Israel

PAPER DRIVEN BY NEW DEMAND & TIGHT SUPPLY

- PRICES WELL ABOVE PRE-COVID
- OCC FLAT TWO MONTHS NOW
- RMP UP BUT PROBABLY A REACTION TO HIGH PRICE OF OCC

PLASTIC PRICES RISING BUT

- NHDPE BELOW PRE COVID – PP BARELY ABOVE – PET & CHDPE THE ONLY ONES SOLIDLY ABOVE
- SEASONAL INCREASES WILL REVERSE
- COLOR HDPE & PP BENEFIT AS NEW HOUSING STARTS & INFRASTRUCTURE INCREASE

METAL PRICES SOLID

- ALUMINUM & STEEL WELL ABOVE PRE-COVID
- SEASONAL FOR ALUMINUM CANS
- CONSTRUCTION DEPENDENT FOR STEEL CANS

TRENDS TO WATCH

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

SOURCES INCLUDE

NERC Recycled Paper Demand Increases March 2024

<https://nerc.org/documents/Recycled%20Paper%20Capacity%20Increases%20in%20North%20America%202017%202024.pdf>

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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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