

Recycling Update 2023

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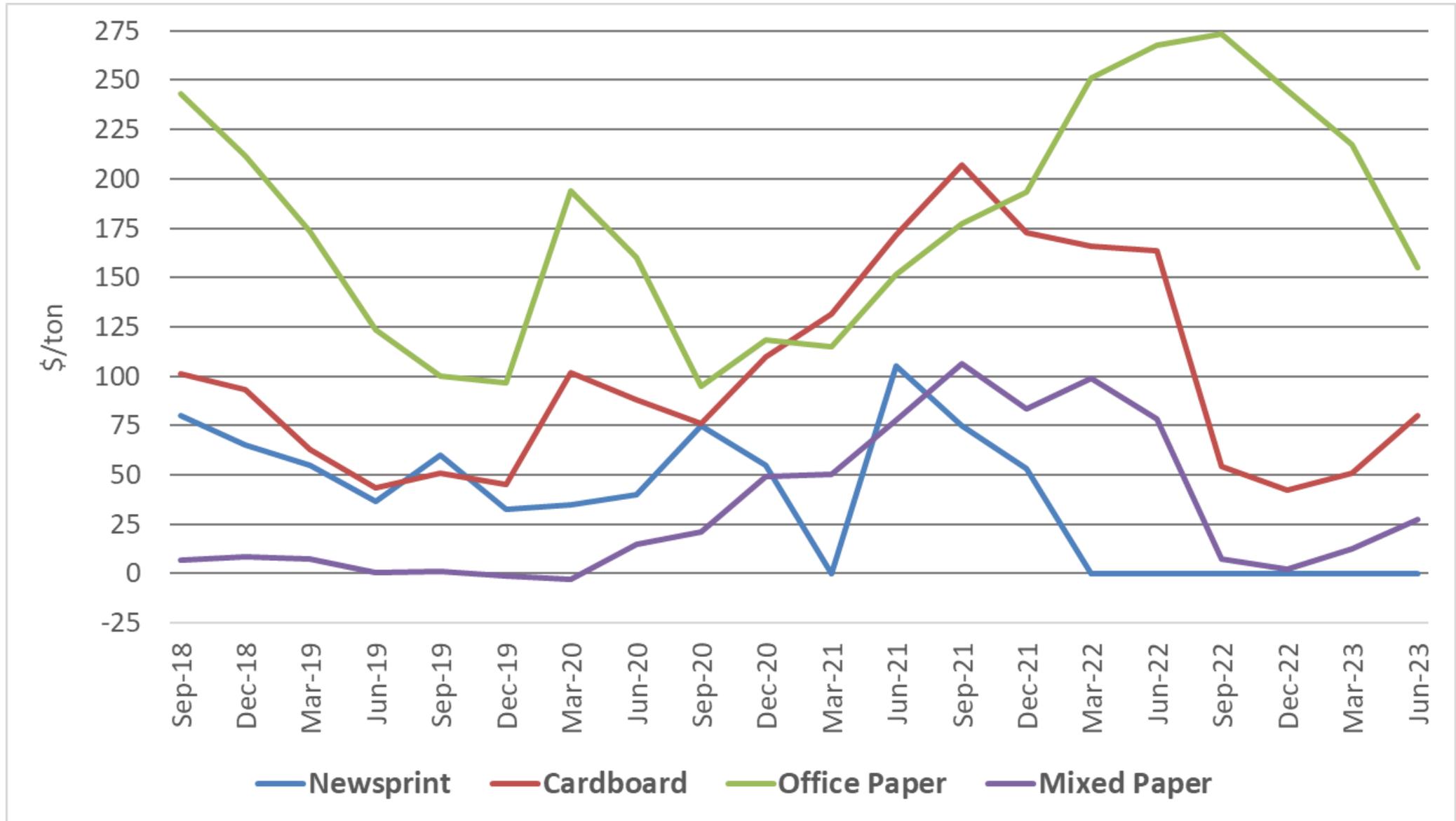
North Carolina Department of Environmental Quality



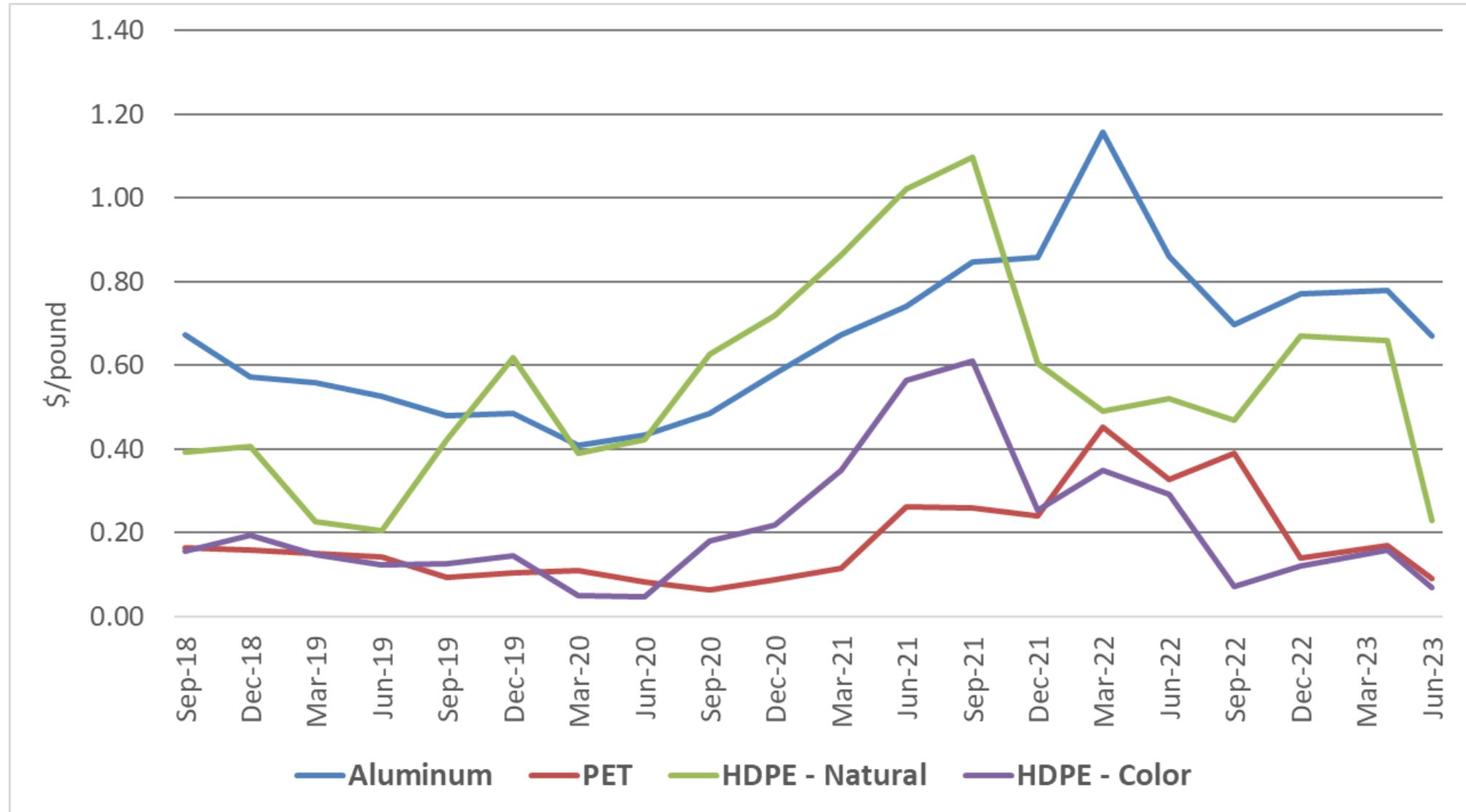
RECYCLING MARKETS: Trends

- Statewide focus on contamination education.
- Southeast has strong and growing domestic markets.
- Recyclers and MRFs are investing in facilities and equipment.
- Grant programs.
- Fiber processing
 - still losing facilities
- Plastics processing
 - hard to secure locations for advanced recycling
- Demand will increase, pricing will improve.
- Advances in tech will provide more recycling opportunities.

Five Year Pricing Trend for Recyclable Fiber Commodities



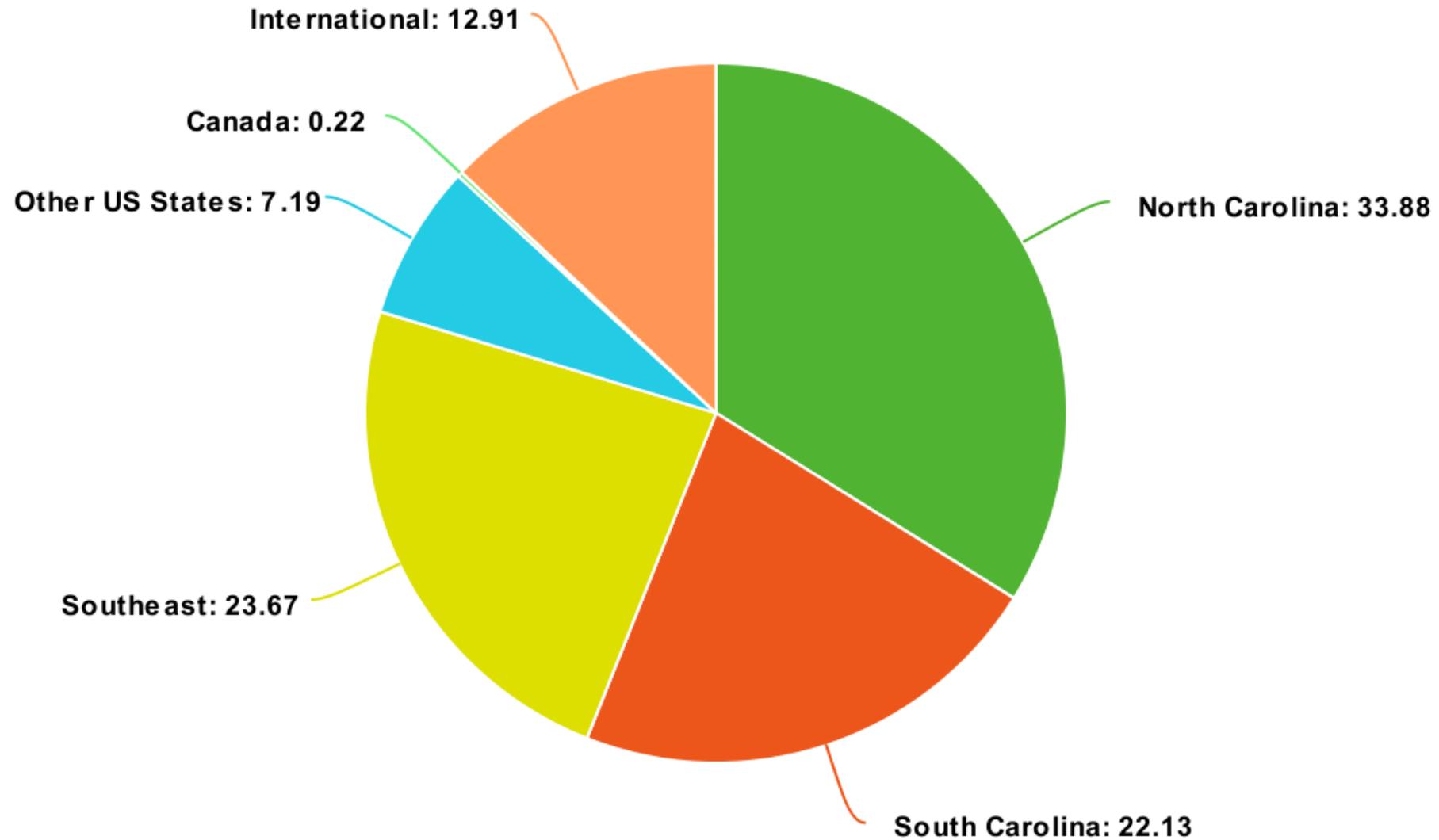
Five Year Pricing Trend for Recyclable Container Commodities



<i>NC Estimates</i>	Annual Pounds
Total Industrial Plastics Recycled	113,670,695.79
Total Residential Plastics Recycled	84,683,966.00
Total Plastics Recycled	198,354,661.79
Total Plastics Generated	2,300,000,000
Total Plastics Available for Recovery	2,100,000,000

Rough Estimates of Plastic Recycling

Where Does My Recycling Go?



NC Recycling Infrastructure



Market Challenges

Your problem recyclables are most likely not a high value material

- Markets fluctuate
- Your problem material is not worth what it may have been in the past
- It's a “buyers market”
- China
 - (less of an issue than before – new normal – history is important)
- Cost avoidance
- Best case scenario is a cost neutral solution
- You will likely have to pay to have material recycled

CHINA WASTE IMPORT BAN



China



- 2017: China announces efforts to clean up the country. Files with WTO
- Unprocessed plastics are BANNED
 - effective January 2018
- Mixed paper is BANNED
 - effective January 2018
- Other recovered paper and plastic must not exceed 0.5% contamination
 - effective March 2018
- China's goal to ban all fiber imports by 2021

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Market Challenges

You will likely need more than one recycling vendor

- Truckload quantities
- Storage
- Aim for mixed loads

Communication and Time Challenges

- Recycling may not be your only job
- Vendors may have a million questions or,
- Vendors can be unresponsive

What Do Your Recycling Vendors Need You To Know

- What item do you have?
- How much do you have?
- How frequently do you have it?
- How is it prepared?
- Is the item free from contamination?

RECYCLING MATERIAL INFORMATION SHEET

Recycling

Material Information Worksheet

Instructions: Fill out one sheet per item for each vendor.

MATERIAL INFORMATION

Material Type

Item Description

Location of Generation

Current Disposal Method

Landfill

Recycle

WTE

Current Disposal /Recycling Company

Frequency of Accumulation

Ongoing

Seasonal

One-Time

Estimated Amount (per month/per season)

Current Storage Method

Can Material Be Baled or Boxed

Yes

No

Level of Risk

Regulatory Impact

Additional Info

Include Pictures Below

What Does Your Recycling Vendor Need You To Know

- May need more item separation than before
 - Example: Plastics that used to be sold in a mixed bale now need to be separated in order to be marketable
- Less room for sorting errors
- Zero tolerance for contamination
- Need more education and enforcement

What Does the Main Office Need To Know

Recycling is not free

**Recycling should not be counted on as
revenue**

**Recycling is a utility like water, power,
internet**

CONSOLIDATION

Brewery Waste Consolidation

9 breweries – 4 county region

Consolidate hard to recycle items in 1 place

**Quantity creates markets for
hard to recycle items**

Common Brewery Waste

PP Grain Bag



Foil/Plastic Hops Bag



Stretch Wrap



Cardboard



How Can We Recycle Common Brewery Waste?



- NC DEACS met with an industrial recycling company to discuss options
- Result: Regional Consolidation Partnerships

Regional Consolidation Partnerships

- Participating breweries take materials to one central location
 - Delivery trucks make room for recycling on their routes
- All participating breweries participate in labor and share in cost of service



Consolidation Points

- Must have tractor trailer loads of baled material
 - Each truck holds 13 bales
- 15 Gaylord boxes = 1 bale
- 15 Gaylords for grain bags
- 15 Gaylords for hop bags
- 15 Gaylords for stretch wrap
- Need room for 45 Gaylords
- Room for baler
- Room for cardboard bales



What Will This Cost?

- Grain Bags – Can have value
- Plastic Wrap – Can have value
- Cardboard – Can have value
- Hops bags – **NEGATIVE VALUE (.13 PER POUND – Waste to Energy)**
- Baler - Varies
- Trailer Rental – Around \$110 per month
- Shipping Costs – Can fluctuate
 - 80 miles ran \$425

- **Cost avoidance – Trash dumpster**
- **Cost avoidance – Sharing cost**
- **Cost avoidance – Property tax credit for recycling areas**



National Policies and Trends

More domestic recycling capacity

Extended Producer Responsibility

Brand commitments on recycled content



Emerging Technologies

Chemical Recycling

Pyrolysis

Robotics





NORTH CAROLINA
WASTE TRADER



NORTH CAROLINA
RECYCLING
MARKETS DIRECTORY

Resources

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