



ASSOCIATION OF PLASTIC  
**RECYCLERS**

# Reducing Materials that Contribute to Solid Waste

TURI, May 2026

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*The information provided in this presentation is not a substitute for legal advice. Before taking any actions based upon such information, consult with the appropriate professionals.*

## Who is APR?

APR is an international non-profit and the largest North American organization focused exclusively on improving recycling for plastics.



## What Do We Do?

Our mission is simple:  
**RECYCLE MORE PLASTIC**  
to reduce waste.

# STEPS OF PLASTICS RECYCLING

## Collecting



**Haulers** collect mixed recyclables from homes and businesses.

## Sorting



**Material recovery facilities (MRFs)** sort types of plastics into bales.

## Processing



**Reclaimers** sort, grind, wash, and process plastics into pellets, flakes, or sheet.

## Manufacturing



**Converters** use recycled plastics to make new packaging and products.

**Reclaimers and recyclers are the CORE of APR**

# APR Members Span the Entire Value Chain



# APR Member Sampling

## RECLAIMERS/RECYCLERS



## AFFILIATES



Together, APR members span the entire value chain and shape the future of our industry.

- Reclaimers/Recyclers
- Brand Owners
- Retailers
- Converters
- Equipment Manufacturers
- Testing Laboratories
- Certifiers
- Label & Ink Manufacturers
- Resin Manufacturers
- Additives Manufacturers
- Researchers
- Technical Consultants
- And more!



# Agenda

- How the recycling process works + contaminants
- Sourcing recyclable materials
- Finding a recycler
- Sourcing recycled materials



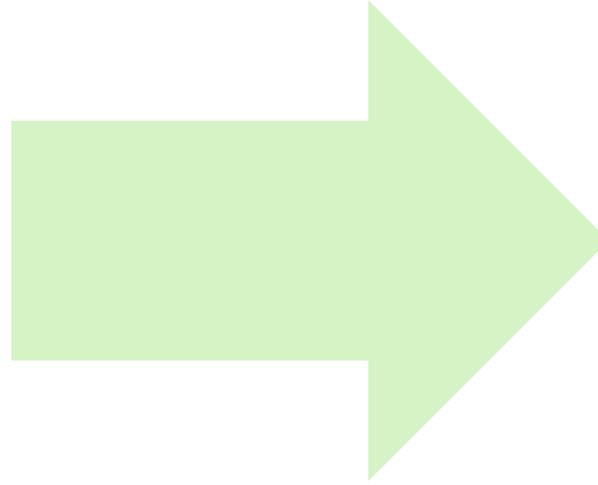
# How the Recycling Process Works INSIDE A PLASTICS RECLAIMER



# INPUT: PRESORTED BALES

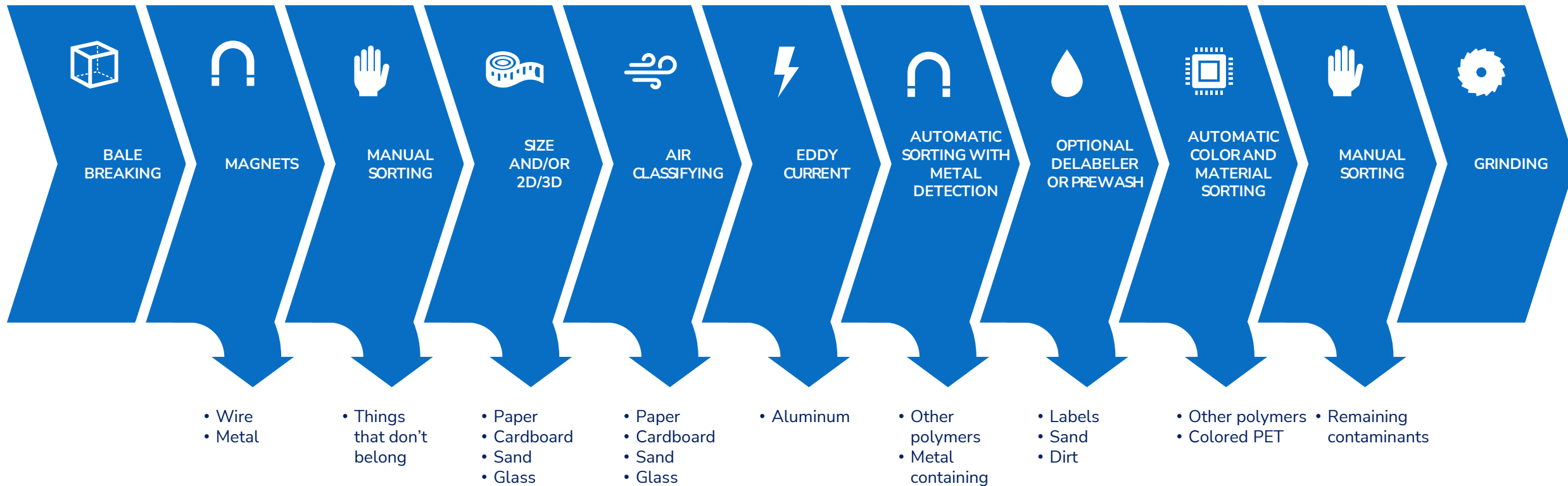


# OUTPUT: RECYCLED FLAKE OR PELLET



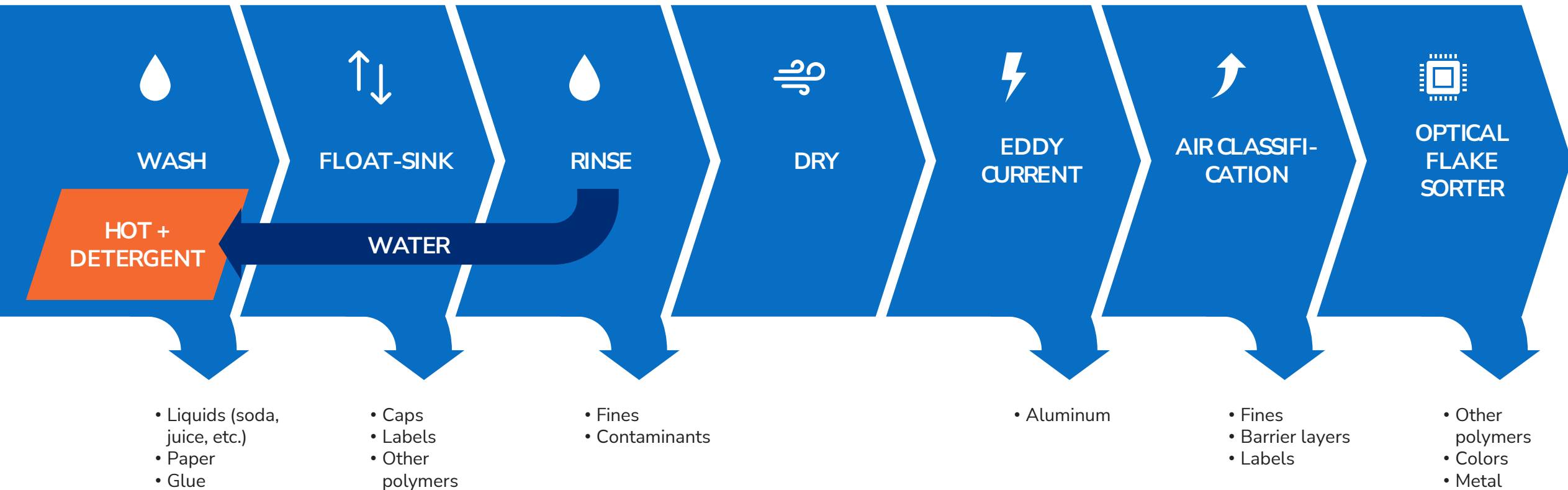
# STEP 1: SEPARATE COMMODITIES FROM CONTAMINANTS

## PET Reclaimer Front End Sorting process




# STEP 2: WASH AND SORT

PET wash line for ground material (i.e. flake)



# STEP 3: MAKING NEW PLASTIC PRODUCTS


**Extrusion:** Flake is melted, filtered, devolatilized and processed into pellets and/or sheet.



**Transferred:** Sold to plastics converter or compounder for customization.



**Customized:** Formulated to meet product specifications for color, strength, flexibility, etc.



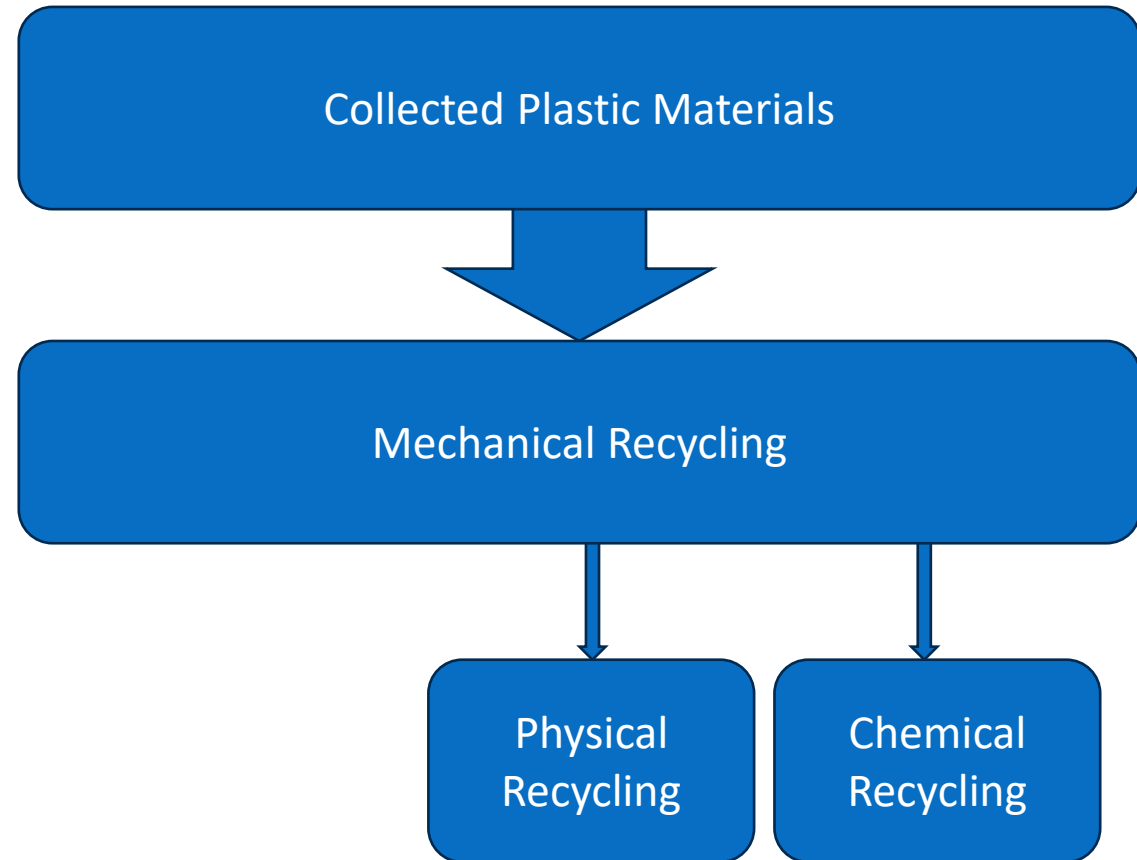
**Manufacturing:** Sold to manufacturer to make new products, replacing use of new virgin plastic.

*\* Note some or all of these processes can be done at the same location and/or vertically integrated companies.*

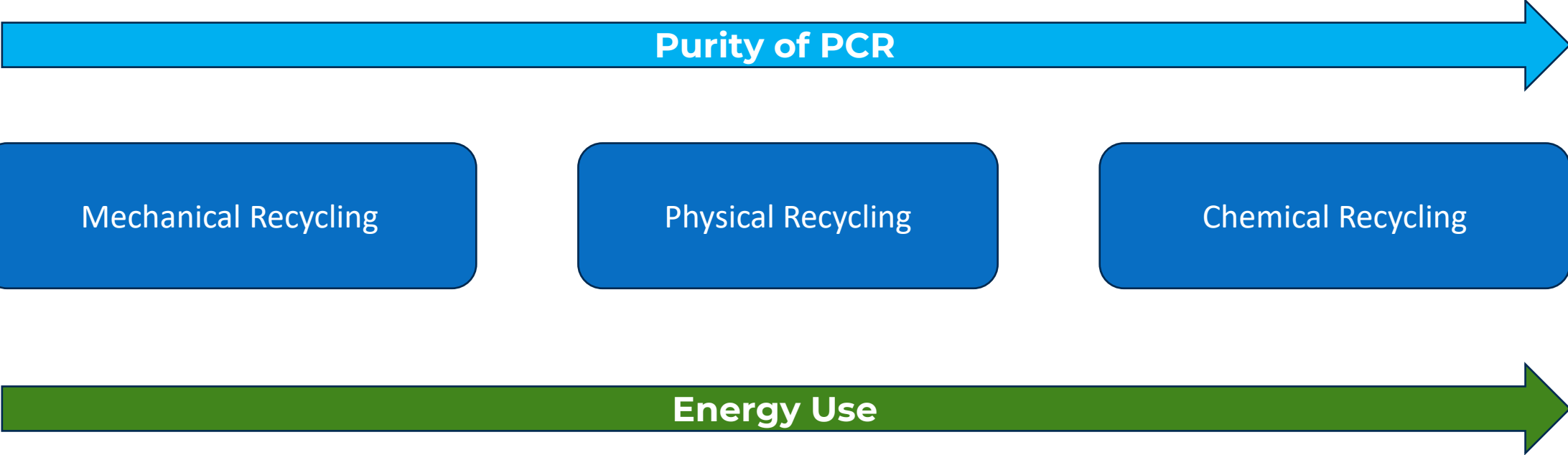


# Mechanical, Physical, and Chemical Recycling

The vast majority of recycled plastic is recycled mechanically.



# Mechanical, Physical, and Chemical Recycling



# COMMON CONTAMINANTS

# DESIGN FEATURES THAT MAKE PLASTIC NON-RECYCLABLE

Design features that fail the recycling process.



Dark colors



PVC and  
PLA



Metals: lids,  
springs, labels



Small or flat formats



Large labels

# DESIGN FEATURES THAT MAKE PLASTIC NON-RECYCLABLE

Design features that make the recycled plastic unusable.



Organic fillers and “(bio-)  
degradable” additives

# DESIGN FEATURES THAT MAKE PLASTIC NON-RECYCLABLE

Design features that interfere with density.

## PET MUST SINK



**Foamed PET**  
that fails APR test  
protocol PET-S-05

## OLEFINS MUST FLOAT



**“Heavy” adjuvants in polyolefins**  
Additives, fillers, adhesives, or high-  
density polymers that cause density to  
be  $\geq 1.0 \text{ g/cm}^3$

# DESIGN FEATURES THAT ARE TOP CONTAMINANTS TO QUALITY



PETg and PVC



Dark colorants



Paper labels



Metals: lids, springs, labels



Organic fillers and “(bio-)degradable” additives

# Sourcing Recyclable Materials

# Why Design Matters

In a circular economy, companies are their own material suppliers.

**Preferred:**  
recyclable with  
maximum quality  
and yield



**Detrimental:**  
recyclable but  
reduces yield  
and/or quality

# APR Design® Guide for Plastics Recyclability



Scan for Guide



Since 1994, has helped companies determine if packaging or components are compatible with recycling system

- ✓ Guidelines created transparently by recyclers and packaging experts, based in scientific research
- ✓ Widely recognized as the authority on how to design plastic packaging for recyclability in North America, referenced by Canadian PROs, and required for compliance with California's SB343 and SB54 laws



# Look for Suppliers with APR Design® for Recyclability Recognition



- ✓ Independent validation that a component or complete packaging is designed for recyclability
- ✓ Provides confidence to package manufacturers and brands making claims
- ✓ Satisfies design considerations for How2Recycle and SB343
- ✓ Improves supply of high-quality PCR, which is critical as content mandate requirements arrive
- ✓ [Directory](#) helps companies easily find recyclable components and packaging

Materials, components, and complete packages are all eligible for APR Recognition.

# Success Stories of Redesigned Packaging

- Coca-Cola redesigned its iconic green Sprite bottle to a more recyclable, clear plastic - [NBC news](#)
- Unilever launched recyclable black pigments in TRESemmé and Axe packaging - [Resource Recycling](#)
- Colgate developed the first ever recyclable toothpaste tube design - [Institute of Sustainability Studies](#)
- Pizza Hut redesigned its wing bowl to remove excess fillers and use recycled content – [Yum!](#)



# FINDING A RECYCLER

# Buyers & Sellers Directory

Search buyer/seller, resin, material form or company



## FILTER

Select from the filters below if you are looking for something specific. To broaden your search, remove one or more of your selected filters to the right, highlighted in blue.

### Country ▲

- United States
- Canada
- Mexico
- Other Countries

### Buyer or Seller ▲

- Buyer
- Seller

### Company type to search ▲

- Post Consumer
- Post Industrial
- Post Commercial (Post Consumer)

### Resin to search ▲

## Search Results

Displaying 71 results. Page 1 of 3 [Next >](#)

GET LISTED

KEY



FULL TRUCK LOADS



PARTIAL LOADS



COMBO LOADS



PCR SUPPLIES



VERTICALLY INTEGRATED

### Accredo Packaging Inc.

Sugar Land, TX, United States  
<https://www.accredopackaging.com/>

CONTACT  
713-580-4800



### ADS Recycling

Hilliard, OH, United States  
<https://www.adspipe.com/recycling>

CONTACT  
319-233-4300



### ALCAMARE INTERNATIONAL (MEXICO)

Guanajuato, GT, Mexico  
<http://www.alcamare.com>

CONTACT  
+5214126904619



### AMUT North America, Inc.

Richmond Hill, ON, Canada  
<http://www.amut.com/>

CONTACT  
905 761 9400



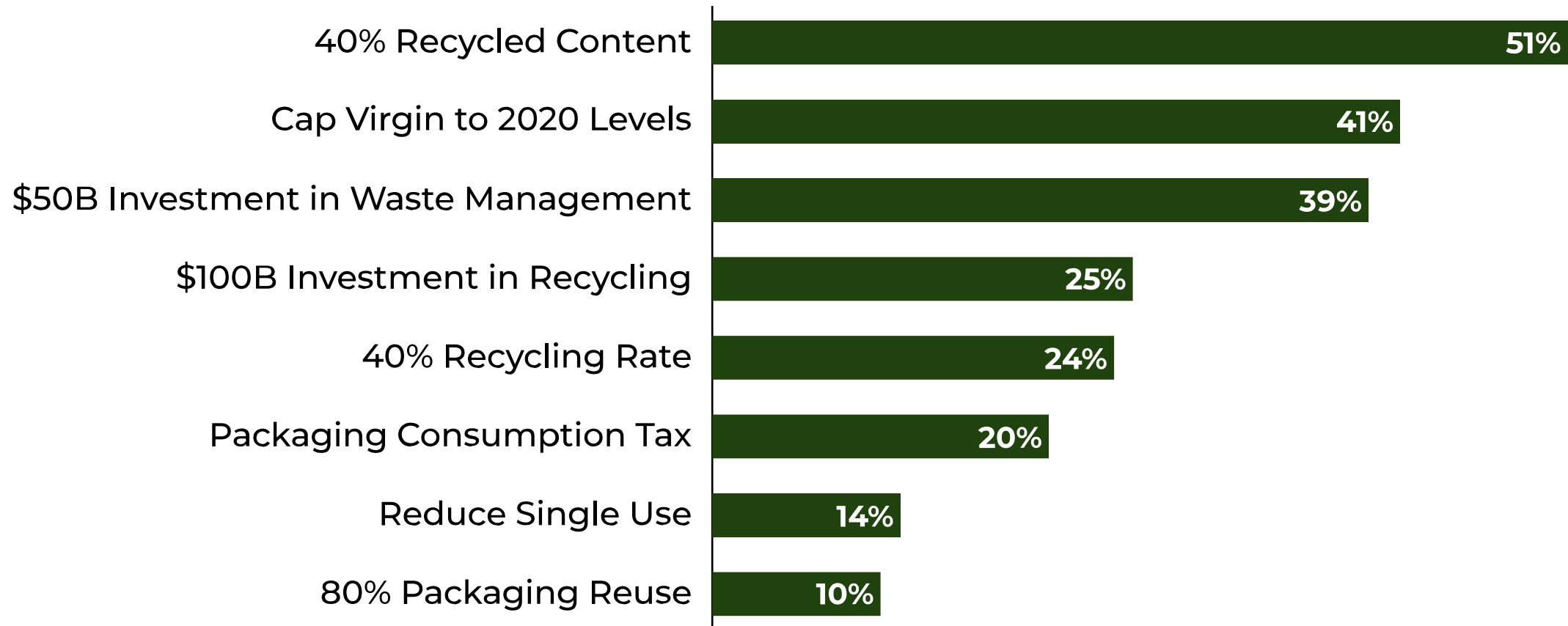
[plasticsrecycling.org/tools-and-resources/buyers-sellers-directory](https://plasticsrecycling.org/tools-and-resources/buyers-sellers-directory)

# Sourcing Recycled Materials



# Requiring Recycled Content Is the Most Effective Policy to Reduce Plastic Waste

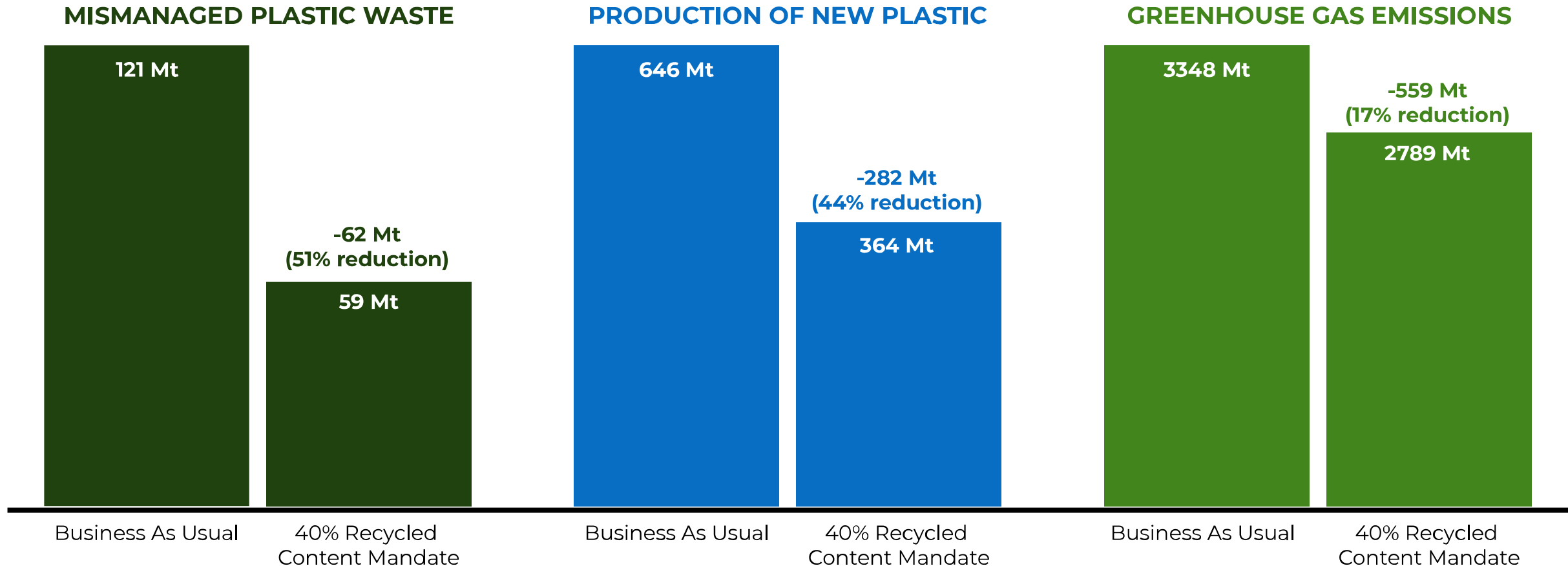
## REDUCTION OF MISMANAGED PLASTIC WASTE



Data source: A. Samuel Pottinger *et al.*, Pathways to reduce global plastic waste mismanagement and greenhouse gas emissions by 2050. *Science* **386**, 1168-1173 (2024). DOI: [10.1126/science.adr3837](https://doi.org/10.1126/science.adr3837)



# Requiring Recycled Content Is the Most Effective Policy to Reduce Plastic Waste

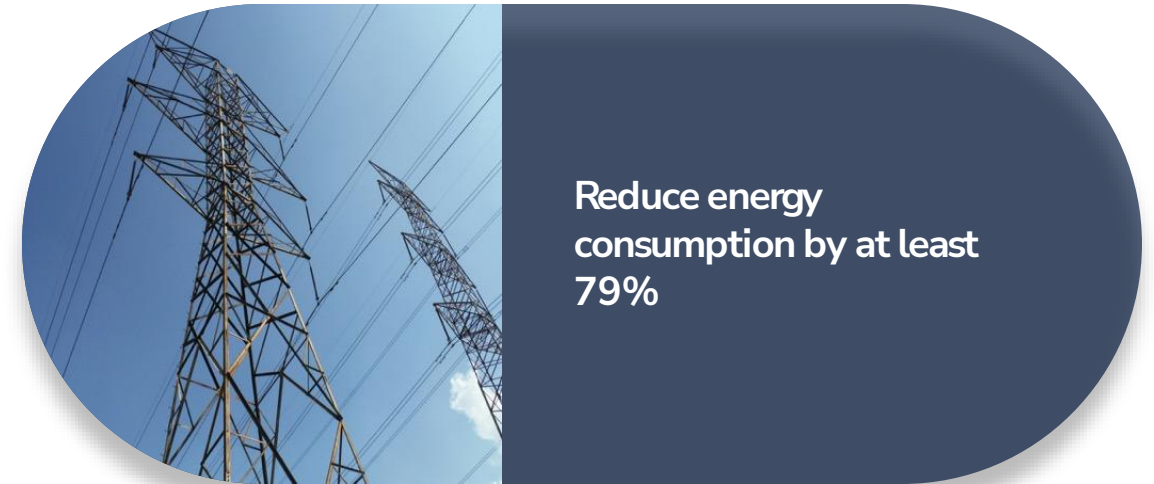


Data source: A. Samuel Pottinger *et al.*, Pathways to reduce global plastic waste mismanagement and greenhouse gas emissions by 2050. *Science* **386**, 1168-1173 (2024). DOI: [10.1126/science.adr3837](https://doi.org/10.1126/science.adr3837)



# Using Recycled Plastic Saves Energy and Lowers Emissions

Recycling and using recycled materials is good for manufacturers, consumers, and the planet.



Reduce energy consumption by at least 79%



Reduce greenhouse gas emissions by at least 67%

# Jobs & Careers in Plastics Recycling



## Collection, Logistics, & Transportation

- Truck drivers and railroad engineers
- Route supervisors
- Transfer station operators
- Bin and cart maintenance technicians



## Sorting & Processing (MRFs)

- Sort line workers (manual and optical sorting)
- Equipment operators (conveyors, balers, shredders)
- Quality control inspectors and safety coordinators
- Facility supervisors and plant managers



## Plastic Reprocessing & Manufacturing

- Plastic grinders and shredding operators
- Washing and pelletizing machine operators
- Extrusion technicians
- Recycled resin production workers



## Maintenance & Technical Support

- Mechanical maintenance technicians
- Electricians and automation specialists
- Equipment installers and repair technicians



# Jobs & Careers in Plastics Recycling



## Engineering, Science & Quality

- Recycling process engineers
- Polymer scientists and materials engineers
- Quality assurance / quality control (QA/QC) analysts
- Environmental compliance specialists



## Business, Sales & Supply Chain

- Recycling commodity buyers and traders
- Supply chain and logistics coordinators
- Sales representatives for recycled plastic resins
- Procurement and human resource managers



## Environmental Program Management

- Recycling program managers
- Sustainability coordinators
- Waste reduction specialists
- Government and municipal recycling planners



## Education, Outreach & Policy

- Recycling educators and outreach coordinators
- Public engagement specialists
- Policy analysts focused on waste, recycling, and materials management



# Food grade recycled materials: FDA Non-Objection Letters (NOLs)



The screenshot shows the FDA website interface. At the top, it displays the U.S. Department of Health & Human Services logo and the FDA U.S. Food & Drug Administration logo. The main heading is "Submissions on Post-Consumer Recycled (PCR) Plastics for Food-Contact Articles". Below the heading are navigation links: "FDA Home", "Food Ingredient & Packaging Inventories", "Recycled Plastics in Food Packaging", and "Submissions on Post-Consumer Recycled (PCR) Plastics for Food-Contact Articles". The text explains that this is a list of submissions for which FDA issued a favorable opinion on the suitability of a specific process for producing post-consumer recycled (PCR) plastic to be used in the manufacturing of food-contact articles. It includes the date of the no objection letter (NOL), the company that made the request, the subject plastic, whether the recycling process is physical or chemical, and limitations on the conditions of use for the recycled plastic. Additional information on the safety of recycled plastics in Food Packaging is found at [Recycled Plastics in Food Packaging](#). A note states that if a listed process is sublicensed to be used by another manufacturer, there is no need for the sublicensing company to obtain a new favorable opinion letter issued to their name, as long as the recycling process and intended use conditions of recycled plastic are exactly the same as described in the original favorable letter listed on this website. The original favorable opinion letter is applicable to the recycling process that FDA reviewed, regardless of which manufacturer uses it. There is a download icon and text: "Download data from this searchable database in Excel format. If you need help accessing information in different file formats, see [Instructions for Downloading Viewers and Players](#)." Below this are three search buttons: "Basic Search", "Advanced Search", and "Field Search". At the bottom, there is a search input field with the label "Search:", a "Show Items" button, and a "Clear" button. In the bottom right corner, it says "Records Found: 432 Show All Page 1 of 9".



<https://www.hfpappexternal.fda.gov/scripts/fdcc/index.cfm?set=RecycledPlastics>

# PCR vs PIR



**Post-consumer recycled (PCR) plastic** comes from household and business recycling bins



**Post-industrial recycled content** is factory scrap

Using both types of recycled plastic reduces waste.

Only PCR strengthens local community recycling programs, reduces mismanaged plastic waste, and meets consumer expectations for recycled content.

# Look for Certified PCR

- You can't reliably tell whether plastic is recycled or new just by looking at it.
- Lock in the benefits of PCR by verifying it is actually post-consumer.
- Builds trust in the supply chain while validating compliance and claims.
- The most credible approach to certify recycled plastic is a chain of custody audit.
- Certification exists for PCR resin and (coming soon) products containing PCR.



# Examples of Products that use PCR



PET



HDPE



PVC



LDPE



PP



PS/EPS



Other



## What they recycle into:

New bottles, clothing, carpet

New bottles, lumber, furniture

Pipes, flooring, siding, binders

New bags, mailers, decking

New jars, bins, buckets, car parts

Picture frames, crown molding

Electronic housing, lumber



# Procurement: Quick Links

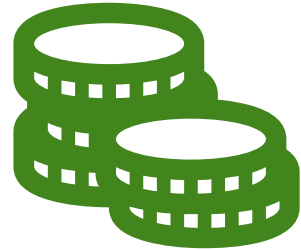
- [APR Buyers & Sellers Directory](#): find recyclers and recycled materials
- [APR Directory of Certified PCR](#): find certified recycled materials
- [Northeast Recycling Council \(NERC\) PCR Demand Hub](#): roadmaps, tools, examples, and how to calculate GHG averted by purchasing products with recycled content
- [Stina Recycled Products Directory](#): find recycled products for personal and business use
- [US Plastics Pact PCR Toolkit](#): resources to support procurement, purchasing, R&D, quality assurance, brand, sustainability, and government affairs teams



# Common Hurdles to Design Changes and Using PCR

# Challenges/Trade-Offs

## Cost



## Quality



As with any manufacturing change or innovation, change can involve:

- Higher cost materials
- R&D costs to implement
- Capital costs to retrofit or buy new equipment
- Risk of change in materials, process, or supply chain
- Defects or impurities



# Cost Drivers of Circular Innovation

Decades of optimization for incumbent materials can't be reset instantly.

## Innovation takes time to:

- Develop recyclable materials and recycled products
- Scale the new designs (which requires **demand**)
- Bring more efficiencies to the designs



# Tips for Success

- Take small steps: use a low PCR percentage in high volume SKUs
- Request adequate technical assistance from OEMs and suppliers
- Start with applications that have more flexible material requirements
- Enter long term contracts
- Embrace aesthetic differences
- Don't go it alone

Not making plastic products or can't use PCR?

**You can leverage your purchasing power to buy recycled products.**



# Homework

- What is one way my company can reduce the amount of plastic waste we generate?
- What is one plastic material, container, or product my company disposes on a regular basis that could be recycled instead? What design features might be limiting its recyclability?
- What is one plastic material, container, or product my company procures on a regular basis that could be made with recycled content?





ASSOCIATION OF PLASTIC  
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**Megan Byers**  
Program Director, Policy Outreach  
[megan@plasticsrecycling.org](mailto:megan@plasticsrecycling.org)

# Discussion + Thank you!