ASSOCIATION OF PLASTIC RECYCLERS

Reducing Materials that Contribute to Solid Waste

TURI, May 2026

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.

Reclaimers and recyclers are the CORE of APR

Manufacturing

Converters use recycled plastics to make new packaging and products.

APR Members Span the Entire Value Chain

APR Member Sampling

RECLAIMERS/RECYCLERS

ADS Recycling
Balcones Recycling
Casella
Clean Tech Incorporated
Custom Polymers, Inc. Recycle. Different.
Denton Plastics
EFS Plastics Making Plastics Sustainable
KW
Merlin Plastics
PetStar
Revolution
Schupan
Srichakra Polyplast
WM Waste Management

AFFILIATES

3M
amcor
Avery Dennison
Berry
circular materials
Coca-Cola
ECOCE
Estée Lauder
General Mills
Kraft Heinz
Nestlé
PepsiCo
PFE
P&G
Siegwerk
Silgan Dispensing
Target
Van Dyk recycling solutions
Yerecic Label

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!

APR®

Agenda

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

How the Recycling Process Works

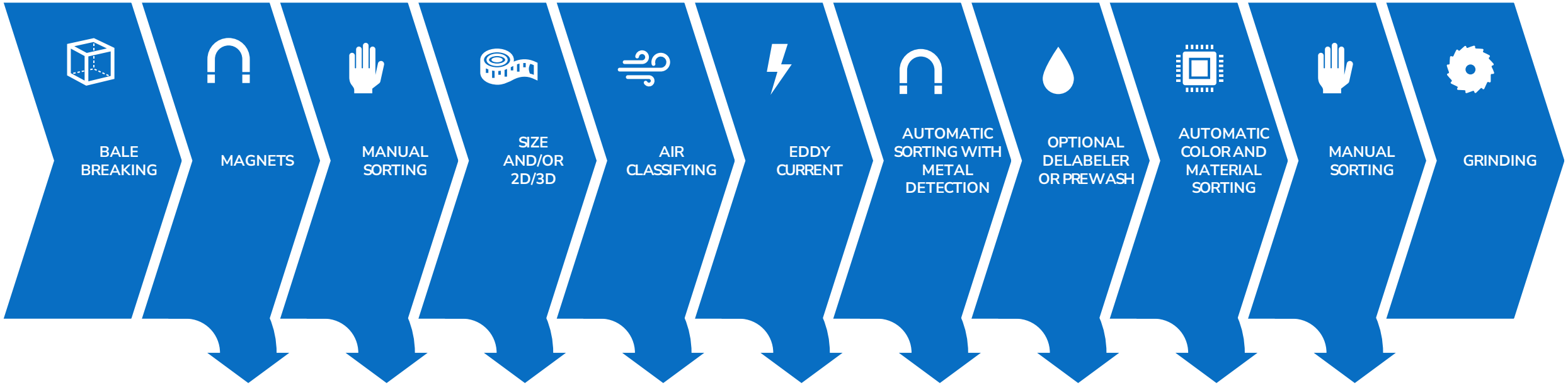
INSIDE A PLASTICS RECLAIMER

INPUT: PRESORTED BALES

OUTPUT: RECYCLED FLAKE OR PELLET

STEP 1: SEPARATE COMMODITIES FROM CONTAMINANTS

PET Reclaimer Front End Sorting process



- Wire
- Metal

- Things that don't belong

- Paper
- Cardboard
- Sand
- Glass

- Paper
- Cardboard
- Sand
- Glass

- Aluminum

- Other polymers
- Metal containing

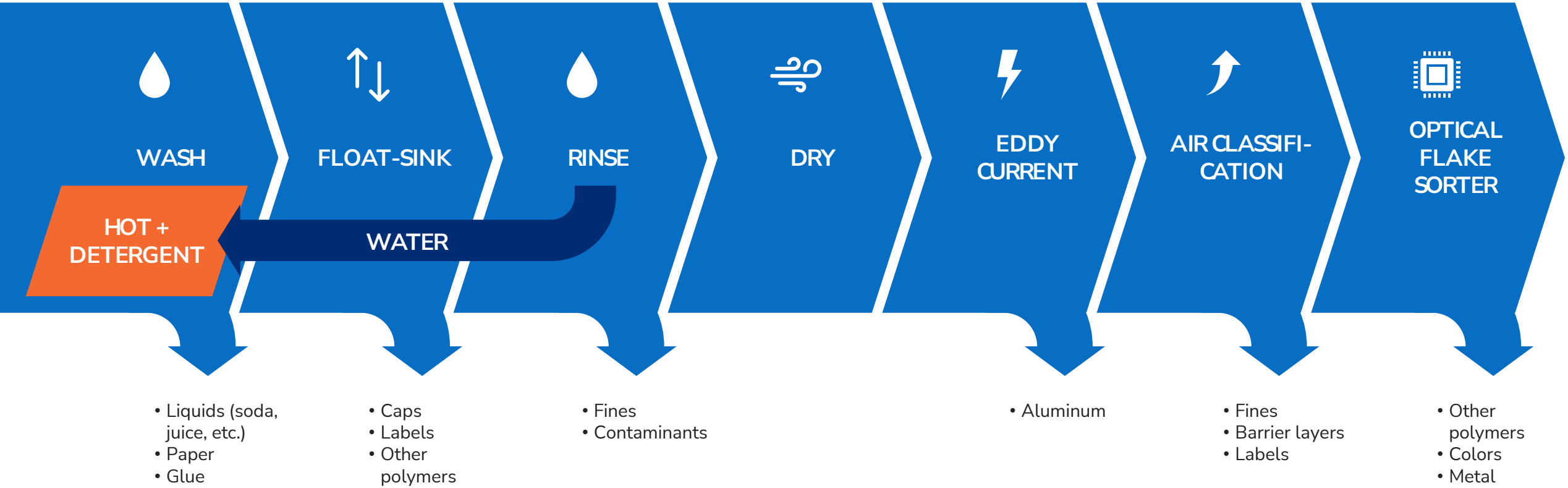
- Labels
- Sand
- Dirt

- Other polymers
- Colored PET

- Remaining contaminants

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.

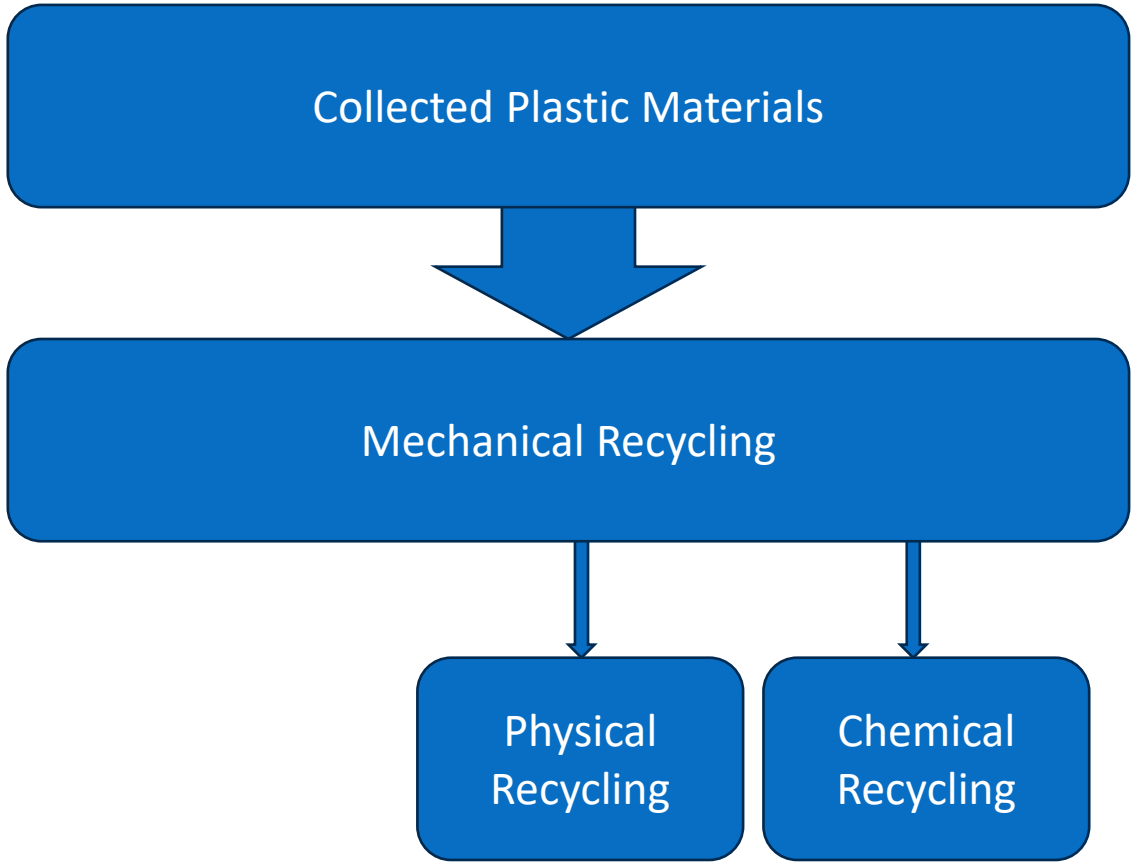
Customized: Formulated to meet product specifications for color, strength, flexibility, etc.

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

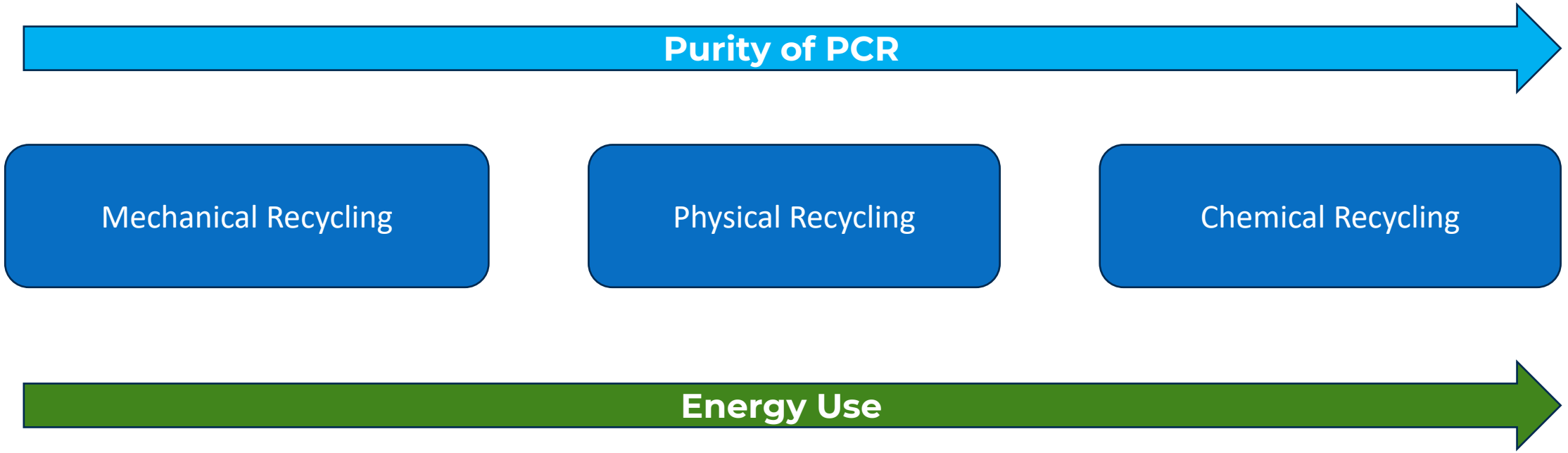
** Note some or all of these processes can be done at the same location and/or vertically integrated companies.*

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 ≥1.0 g/cm3

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.

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

ELLEN MACARTHUR FOUNDATION

how2recycle.info Empty & Replace Cap PLASTIC BOTTLE

U.S. PLASTICS PACT

THE RECYCLING PARTNERSHIP

Walmart

The Consumer Goods FORUM

Éco Entreprises Québec

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.

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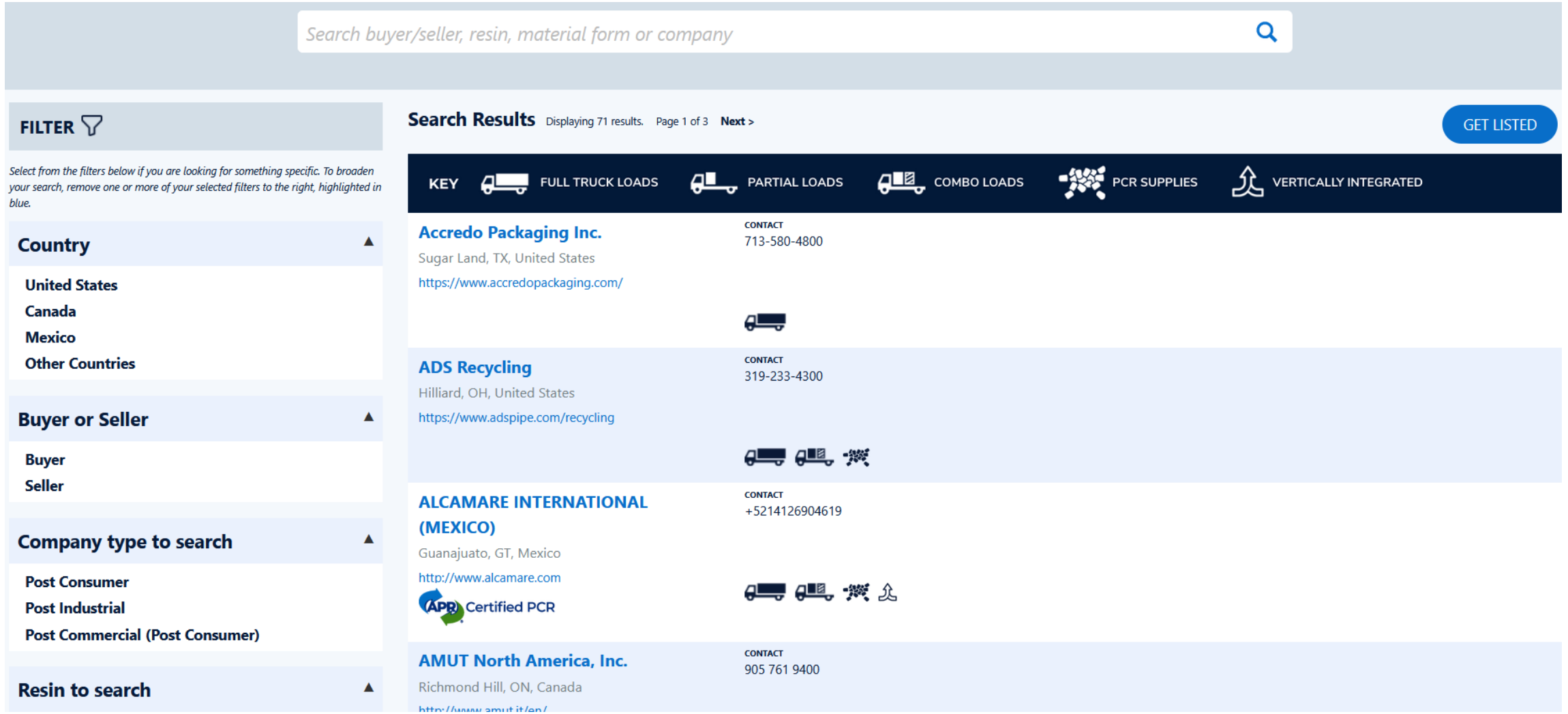
Success Stories of Redesigned Packaging

- 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

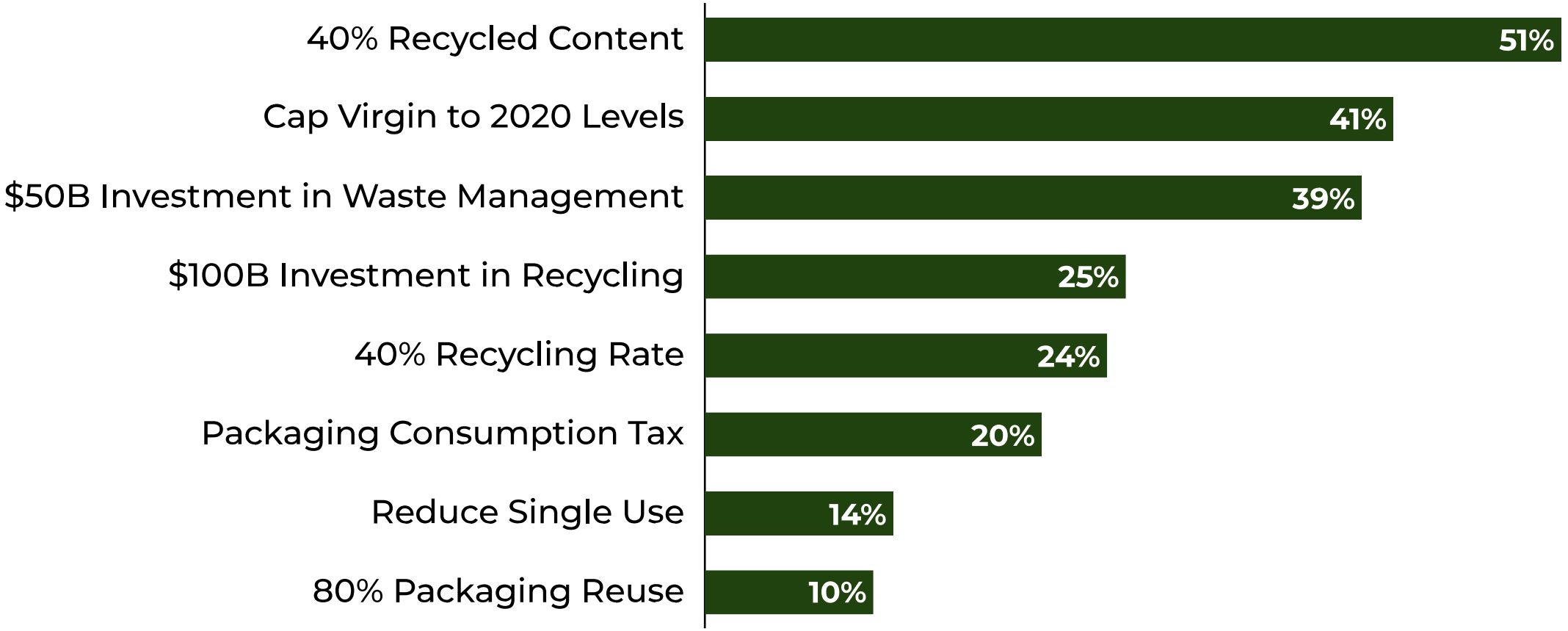


plasticsrecycling.org/tools-and-resources/buyers-sellers-directory

Sourcing Recycled Materials

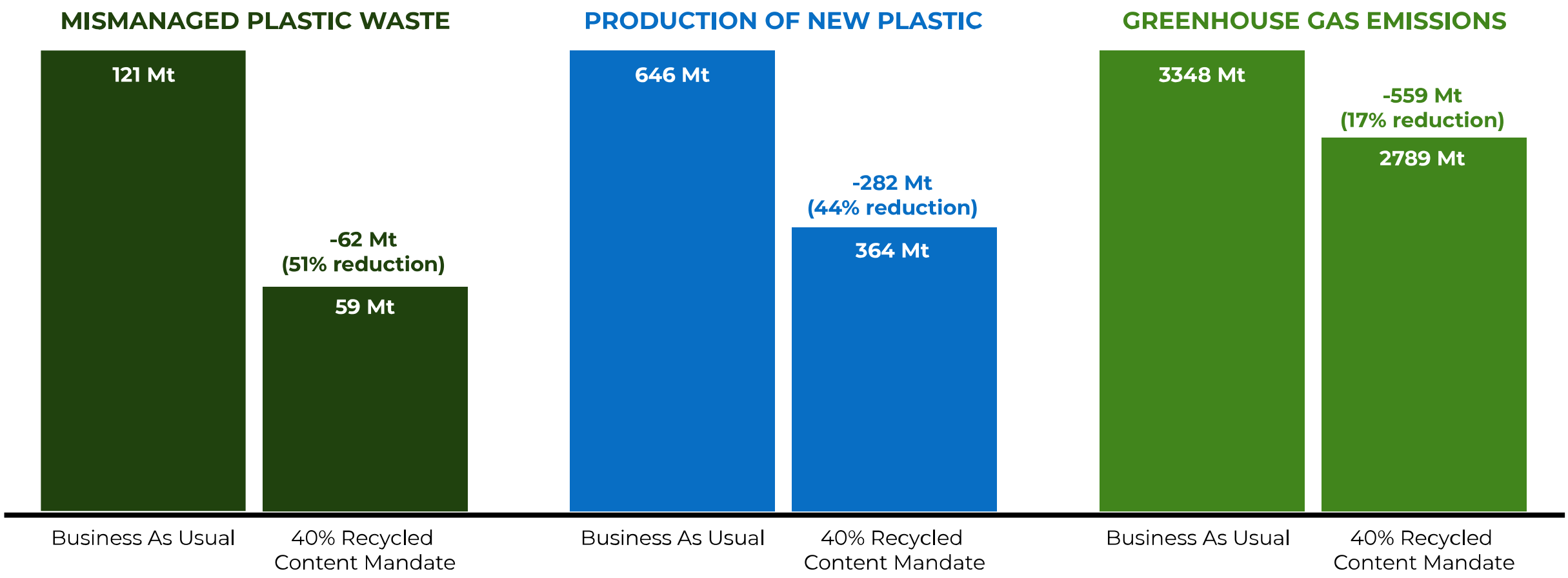
Requiring Recycled Content Is the Most Effective Policy to Reduce Plastic Waste

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

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



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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

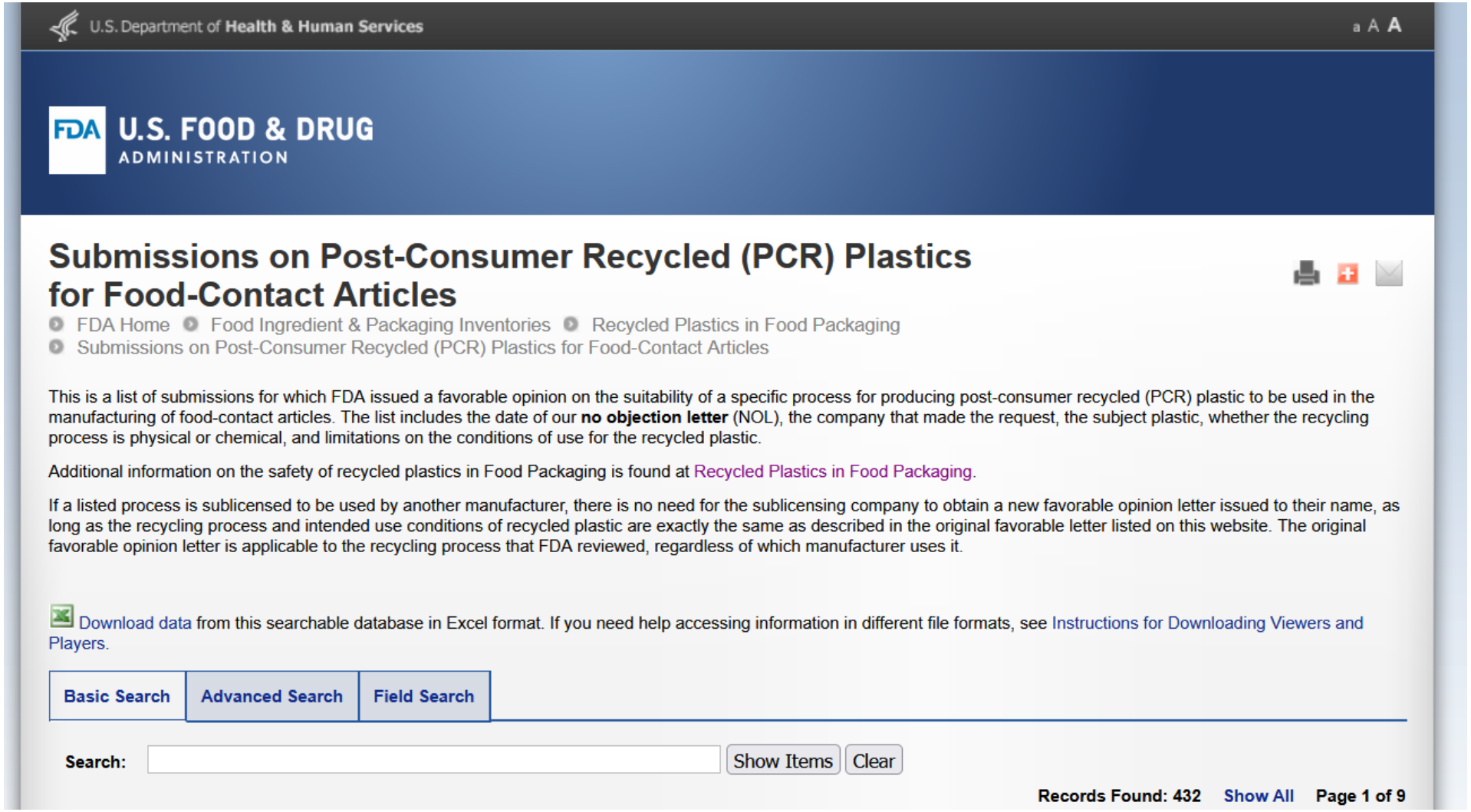
Environmental Program Management

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

Education, Outreach & Policy

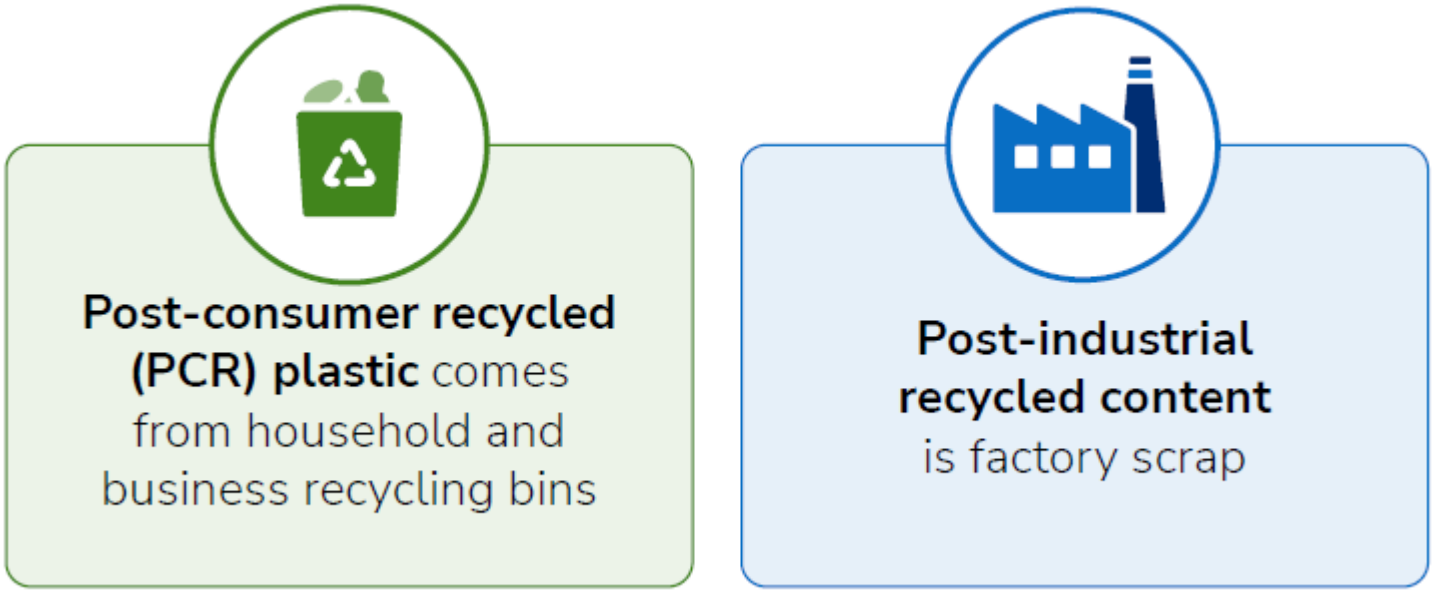
- Recycling educators and outreach coordinators
- Public engagement specialists
- Policy analysts focused on waste, recycling, and materials management

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



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

PCR vs PIR



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

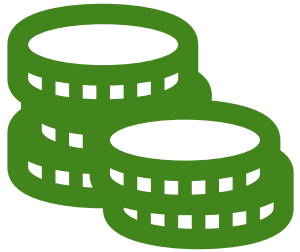
Procurement: Quick Links

- 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?

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LISTEN

RECYCLED CONTENT

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Discussion + Thank you!