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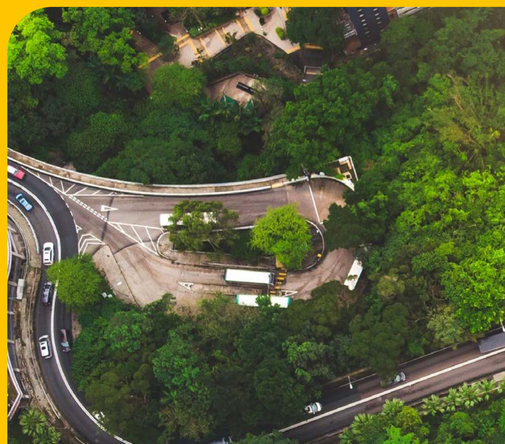
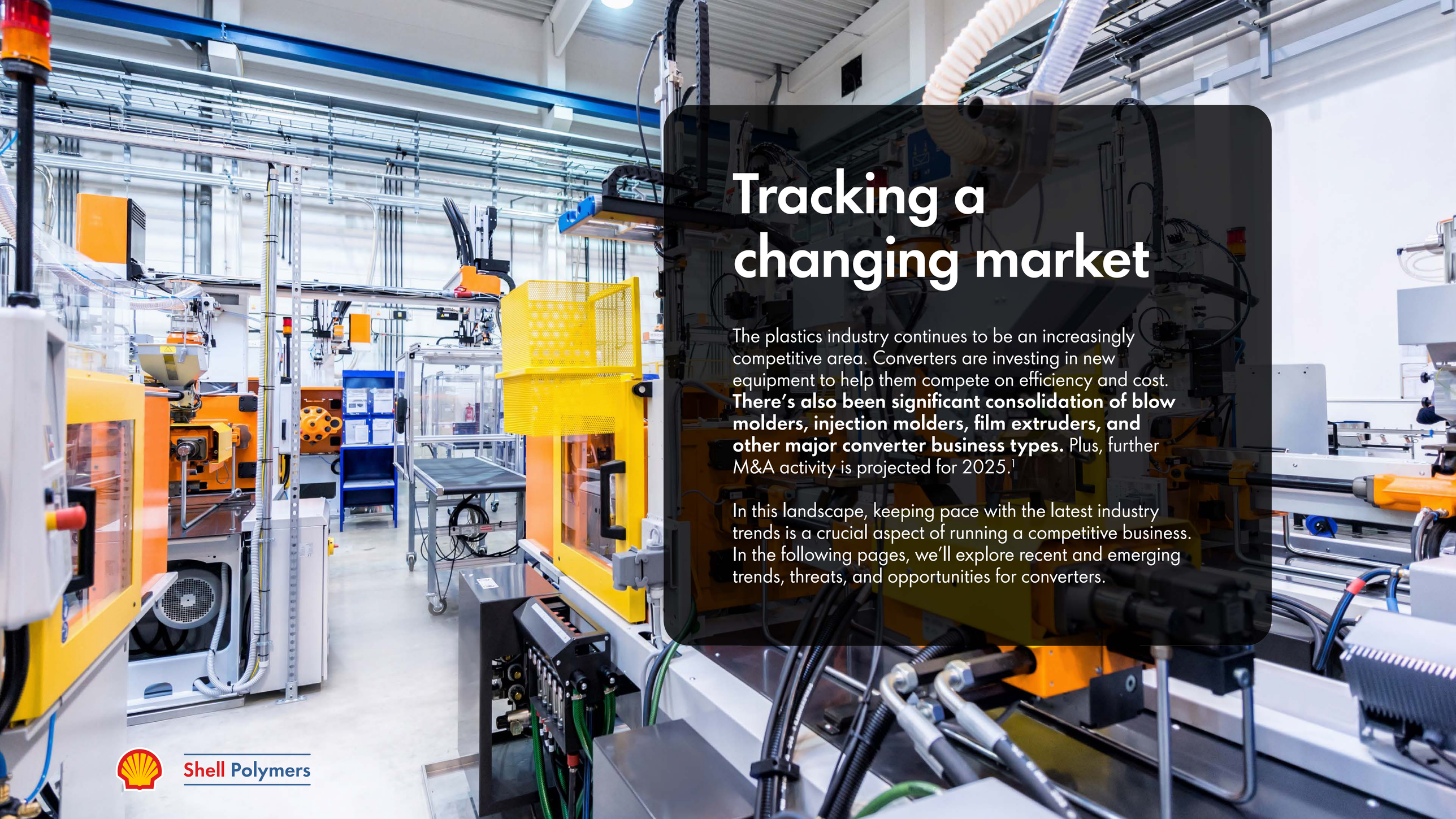
Polymer trends report

Converters are innovating through headwinds





Tracking a changing market

The plastics industry continues to be an increasingly competitive area. Converters are investing in new equipment to help them compete on efficiency and cost. **There's also been significant consolidation of blow molders, injection molders, film extruders, and other major converter business types.** Plus, further M&A activity is projected for 2025.[1]

In this landscape, keeping pace with the latest industry trends is a crucial aspect of running a competitive business. In the following pages, we'll explore recent and emerging trends, threats, and opportunities for converters.

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Economic update

Inflation and interest rates are holding converters and brands back to some extent, but there are positive signs, too.

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Glimmers of optimism amid economic headwinds

Sticky inflation, trade disruptions, and higher interest rates remain as headwinds, but there are some hints of potential expansion on the horizon.

Available plastics manufacturing capacity still remains, offering a potential opportunity for growth without outsized capital investments.[2]

Meanwhile, the gap between manufacturing job openings and hires has narrowed since April 2022. However, the gap remains in the negative. Hires have fallen short of openings since 2013, save for a portion of 2020 due to COVID lockdowns.[3]

That means converters will continue to compete for a somewhat limited talent pool as they try to grow their businesses.

Pricing and inventories are up

U.S. price indices for HDPE and LLDPE were steady or rising through much of 2024, thanks in part to demand from the packaging, construction, and automotive sectors.[4 5]

Some end-market sectors, including packaging and consumer packaged goods, continue to hold above-normal inventory levels.

This could impact converters' production volume and supply chain strategies, at least in the near term.[6]

Circular realities

Keeping Sustainability Initiatives Moving

A number of major brands have staked out leadership positions in sustainability by pledging to increase the amount of recycled content in their packaging, with some pledging as much as 50% recycled content by 2030.

Despite admirable efforts, hitting those ambitious PCR goals, or reducing virgin plastic usage by incorporating alternative materials, could prove challenging for a number of reasons, including:

- Recycled content, especially post-consumer resin (PCR) is more expensive and supply can be limited.
- Mechanically recycled content can create technical difficulties in converter operations.
- Plastic alternatives like glass and paper come with their own challenges, which can include a high carbon footprint for production and transport.[7]

Organizations haven't given up on improving sustainability. Instead, they are increasingly building market realities and emerging state requirements into their goals, taking a more tailored approach.

Walmart, the largest retailer in the United States, is an instructive example. In May 2025, the retailer left the U.S. Plastics Pact[8]–but has refocused on reducing plastic waste **by working with other organizations taking industry input and emerging legislation into account when pursuing increased circularity.**

> **"Walmart engages with other industry coalitions related to packaging transformation. It's a co-founder of the EPR Leadership Forum, a group that also includes Mondelēz, Mars, Nestlé and L'Oréal USA, as well as Amcor, Coca-Cola, Ikea, Keurig Dr Pepper, Kraft Heinz, PepsiCo, SC Johnson and Target. Walmart is also a founding member of Circular Action Alliance, the industry-founded producer responsibility organization leading EPR implementation in multiple U.S. states."**
>
> **Packaging Dive Brief**, May 22nd, 2025.

PCR faces a projected shortage, but emerging technology can help close the gap

Making a relatively fast switch to recycled products comes with significant challenges.

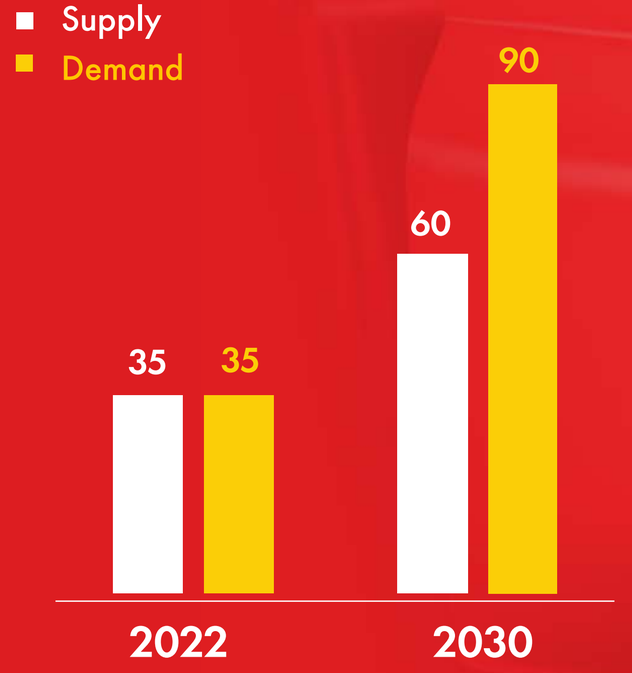
A projected imbalance in PCR supply and demand is one of them, according to a recent McKinsey report.[9]

"The demand for [PCR] plastic packaging is expected to increase threefold by 2030 while the supply of these materials is only expected to double," McKinsey said. **"**Regulators around the globe are mandating a variety of compliance measures to curb the use of packaging, especially plastics. Consumers continue to demand that the brands they buy use sustainable packaging. At the same time, persistent inflation makes reducing costs a must-do."

However, new technologies are emerging to provide more recycled materials for converters, including PCR, with advanced recycling as one of the biggest to keep an eye on. A report from Exactitude Consultancy estimates advanced recycling will grow at a rapid CAGR of 46.5% until 2031, and states that "In the packaging industry, Advanced Recycling Technologies (ART) are crucial when it comes to recycling complex materials like multi-layered plastics and composites. **Companies who use [advanced recycling] are able to cut their use of virgin plastics, reduce waste and thereby promote a more environmentally friendly packaging system."**[10]

The demand for recycled plastics is expected to far outpace the available supply by 2030.

Recycled plastic supply-and-demand balance, million tons per year



Equipment and design innovation are sustainability difference-makers

Converters and brands have proven that they can reduce the consumption of virgin plastics through innovative designs and advances in molding equipment.

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A food-grade pail packed with PCR

At 2024 NPE: The Plastics Show, Milacron demonstrated the evolving capabilities of its injection molding system, with higher output double-cavity processing and precise control of a core layer of **46% PCR in a food-grade plastic pail.**[11]

The company, which used Shell Polymers HDPE in the outer layers of its pail, said the technology can help support converters in their efforts to meet single-use plastic targets and brand-owner recycled content goals put forth in legislation like California's SB 54.

Blow molding equipment OEMs have also made strides in PCR layering, including W. Müller, Uniloy, Plastiblow, and ST BlowMoulding, who have highlighted the ability to make their machines more adaptable to multilayer molding with these resins.[12]

Retailers play their part with product design

Sometimes, reducing plastics consumption can simply come down to the design of the packaging.

For example, Costco made headlines for its decision to switch its rotisserie chicken packaging from a clamshell design to a plastic bag.[13] This simple switch cut plastic use by 75%.

> **The retailer made a similar switch with its Kirkland-brand nuts, transitioning them from a plastic jar to a plastic bag design. That reduced plastic used by 85%.**

"The primary goal of packaging is to protect the product and make sure it isn't damaged or destroyed," Tim Wahlquist, who oversees Costco's packaging team, told Plastics News. "There are some cases where using plastic packaging still makes sense."

Indeed, plastic alternatives are not always as advantageous as proponents make them out to be.

A recent study in Waste Management & Research: The Journal for a Sustainable Circular Economy, found that "plastics prove to be a material with excellent environmental performance, provided it is used correctly."[14]

This is due to the light weight of plastics and the maturity of its production processes, which allows for minimal use of material per unit and production optimization.

State regulators and industry organizations build more momentum

While federal regulation pulls back, state-level Extended Producer Responsibility (EPR) initiatives and private organizations are creating new sustainability standards for organizations to pursue.

New producer laws have implications for converters and brands

As of May 2025, Washington state[15], Maryland[16], Oregon, California, Colorado, Maine, and Minnesota[17] have passed EPR laws.

EPR is a policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of the product's life cycle, with the aim of encouraging sustainable practices and reducing environmental impacts.[18]

However, not all EPR laws are created equal–while some take industry expertise into account and focus primarily on boosting recycling, others go further with stricter requirements and even material bans.

> **For example, Minnesota's law requires companies to start paying 50% of the cost of residential recycling in 2029, rising to 75% in 2030 and 90% in 2031.[19]**

Packaging industry representatives called the law **"a fair compromise"** that focuses more on core recycling operations, compared to what other states have passed.

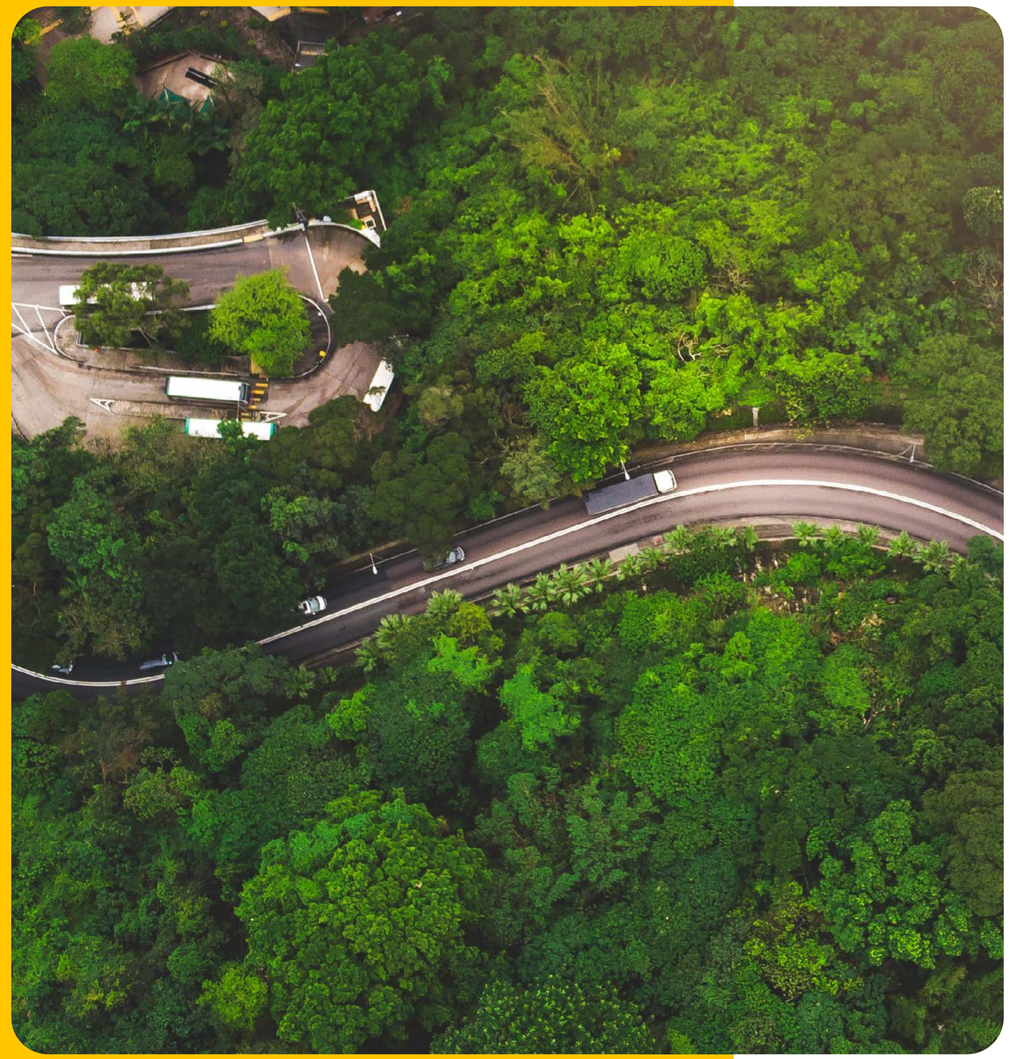
Meanwhile, as of June 2025, New York legislators are considering several EPR bills, including S-5062, which would set up a board to set targets for waste reduction and post-consumer resin use, and S-1464, which would immediately set targets and outright ban some materials.[20]

To comply with EPR laws, businesses will need to learn more about the packaging they use, provide data about it, and pay applicable fees through EPR programs.[21]

Mandated data is expected to vary from state to state, but may include:

- Types of packaging used and applicable weights/counts
- Amounts of recycled content
- Information on whether the package is compostable or reusable/recyclable

Fees are expected to vary based on the level of alignment with the EPR program aims, with higher fees for packaging that's not reusable, recyclable, or compostable.[22]



Companies band together for circular action

In the absence of broader federal guidelines around advancing sustainability, producers and brands have banded together to form organizations that advocate for practical, effective guidelines that reduce plastic waste and improve recyclability.

One organization that is steadily building momentum is the Circular Action Alliance, founded in 2022 to help implement EPR laws and provide guidance to converters, brands, and regulators on how to most effectively reduce waste.[23]

To quote the organization's website,"as a nonprofit, producer-led organization, **CAA is committed to helping producers comply with EPR laws**, delivering harmonized best-in-class compliance services and **working with governments, businesses, and communities to reduce waste and recycle more**."[24]

The CAA's long-term goals include supporting producer governance of EPR programs, creating as much national consistency in recycling programs as possible, and enabling producers to gain access to high-quality recycled materials for including recycled content in new products, like the advanced recycling feedstock Shell Polymers sources from Freepoint.[25]

Key takeaways

How converters can best start tackling tomorrow, today.

Key takeaways to manage change

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Don’t wait to secure PCRs, and invest in alternatives

With rising demand for PCR, now is the time to secure your supply of advanced recycled PE from Shell Polymers. To stay competitive, converters must also drive sustainability across operations—through process and design innovation, and by exploring alternative sustainable feedstocks like bio-based resins and B-C resins.

Highlight plastic’s unique benefits

Make sure brands and their customers understand the unique sustainability benefits of plastic compared to alternatives, such as lower life-cycle emissions and higher efficacy.[26]

Watch for and shape new laws and regulations

Keep track of Extended Producer Responsibility (EPR) laws and proposals, and factor those in when making strategic decisions about production and costs. When appropriate, advocate for policies that focus on expanding recyclability rather than blanket bans.

Team up to advance sustainability

Converters should work with their suppliers and brands for sustainable product design innovation and production optimization efforts.

About Shell Polymers

Shell Polymers sees the value in establishing and building (Real)ationships. We're dedicated to listening to and collaborating with converters and focusing on their wants and needs. We're vested in the success of our customers, not just a transaction with them.

That's why we're helping create a stronger polyethylene supply chain with our **new plant designed to produce up to 3.3 billion pounds** of polyethylene a year. Its strategic location in Monaca, Pennsylvania puts it within 700 miles of the majority of the current North American polyethylene demand.

The site also houses an 86,000-square-foot Application Hall that has commercial-sized units for converting and extrusion equipment, including mono and multilayer blown film lines, extrusion blow molding machines, injection molding machines, and pipe extruders.

Shell Polymers also has a lab dedicated to quality control that ensures the product meets the required specifications, as well as a separate lab for conducting in-depth analysis of Shell Polymers resin and parts made from it. These buildings are also the home of Shell's polymer industry experts.

For further information, please visit our website at www.shell.com/polymers

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Endnotes

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