

Plastics Division Circular Economy Position and Goals

Questions and Answers

OUR PERSPECTIVE

- Plastics are extremely efficient materials that help lower our environmental footprint in almost every part of modern life; at the same time we need to do a better job of recycling and recovering plastics after they are used.
- The drive toward an increasingly circular economy for plastic packaging will help conserve natural resources such as energy, water, and food; support resource efficiency and optimization; and reduce waste and emissions into the environment.
- By implementing a circular economy for plastics within an overall sustainable materials management framework, we enable society to sustain economic growth while improving the environment for future generations.
- America's plastics makers are working in cooperation with retailers, brand owners, government and other stakeholders to grow plastics recycling and move toward a more circular vision of how we design, manufacture and recycle, recover and reuse plastics.
- An important reason plastics are so often used in packaging is because they are strong and lightweight, allowing us to ship more product with significantly less packaging material than alternatives. Using less in the first place lowers plastics' environmental footprint throughout a package's lifecycle.
- And plastic packaging helps keep the things we use fresh, clean, sanitary, and in some instances sterile—helping to keep the people we care about safer and healthier.
- System changes are underway that will transform the ways we recover and recycle plastics resources. We're laying the foundation now. This includes turning used plastics back into their basic building blocks for use as a feedstock when making new plastics.

GENERAL QUESTIONS

What are you announcing?

Members of ACC's Plastics Division are committed to working with governments, our customers, nonprofits and others to significantly improve the recycling and recovery of post-use plastics packaging. To accelerate and measure our progress, we've established two new goals. We've also established a third goal designed to prevent the accidental release of plastic raw materials from our own operations into the environment.

Our goals include the following:

- 100% of plastics packaging is re-used, recycled or recovered by 2040.
- 100% of plastics packaging is recyclable or recoverable by 2030.

- 100% of the U.S. manufacturing sites operated by ACC’s Plastics Division members will participate in [Operation Clean Sweep-Blue](#) by 2020, with all of their manufacturing sites across North America involved by 2022.

Why is this important/significant?

This is the first time U.S. plastic resin producers have made a public commitment with measurable goals to increase the recycling and recovery of plastic packaging. We’re an industry that embraces sustainability, and we recognize consumers’ desire to recycle more plastics. This is a great opportunity for all of us to harness that enthusiasm and to put in place systems, technology and infrastructure to make that happen. Recycling and other types of recovery are at the core of a circular economy and our commitment will help advance greater circularity in how we make, use and re-use plastics.

In addition, U.S. plastic resin producers will strengthen their systems to contain plastic pellets by committing to achieve Operation Clean Sweep-Blue status in some of their operations by 2020 and all of their North American operations by 2022. OCS is a system of best practices for containing plastic pellets at all stages of production, shipping and handling to minimize accidental releases to the environment. OCS-Blue is a higher standard of practices that include submitting data in at least one of the following areas that will be publically reported in aggregate over two- to three-year increments:

- Amount of pellets shipped and/or received from each facility
- Data submitted to state regulatory agencies on the amount of pellets lost to the environment due to accidental release
- Amount of material recovered and recycled within a facility

Why did you set these goals?

Our industry has a long history of investing in recycling, including consumer outreach and education, providing “away from home” recycling options, R&D for new technologies, and more. While those actions have had a positive effect, we realized we had not articulated our vision for the future we want for plastic packaging. These goals are a first step in that journey. We are a data-driven industry, and going forward, we will add detail in how we will achieve those goals, including how we’ll measure and report on progress.

Why focus on packaging?

Our goals focus on packaging because about a third of plastics goes into packaging. U.S. EPA says 43 percent of plastics in the waste stream are “containers or packaging,” so starting here gives us a tremendous opportunity to make a big difference.

What will be different as a result of setting these goals?

The goals we’re announcing will help to drive and align resin producers, packaging manufacturers, brand owners, retailers, and recyclers to move recycling and recovery forward more quickly, and to work together to achieve common goals.

In recent years, ACC’s resin producers have ramped up engagement through groups like [The Recycling Partnership](#), which significantly increases community recycling; [Energy Bag](#), which collects and converts non-recycled plastics into fuels and energy; [Materials Recovery for the Future](#), which is testing sorting solutions for flexible packaging; and the [Wrap Recycling Action Program](#), which

partners w/ cities, states, EPA and retailers to increase plastic film recycling via store drop-off programs.

How do you plan to track and report on your progress toward meeting these goals?

ACC's Plastics Division already sponsors robust tracking programs for three common types of plastic packaging. These include bottles, non-bottle rigids (e.g., containers, caps, lids, etc.), and film (PE wraps and bags). Moving forward, we'll use similar methods to expand the types of packaging for which we track recycling and recovery annually. We also will work with U.S. EPA and provide data for their report "Advancing Sustainable Materials Management: Facts and Figures."

How do you expect to achieve your intermediate (2030) goal: 100% of plastics packaging is considered recyclable or recoverable by 2030?

We are working on those plans now, and we expect the details will evolve over time. However, as a starting point we intend to focus on six areas: (1) designing new products for greater efficiency, recycling and reuse, (2) developing new technologies and systems for collecting, sorting, recycling and recovering materials, (3) making it easier for more consumers to access and participate in recycling and recovery programs, (4) expanding the types of plastics collected and repurposed, (5) aligning those products with key end markets, and (6) and expanding awareness that used plastics are valuable resources.

How do you expect to achieve 100% of plastics packaging is re-used, recycled or recovered by 2040?

In addition to the six focus areas mentioned above, we expect that advanced technologies will be needed to reach that goal. New technologies to break down plastics into basic components for new manufacturing will likely play a significant role for plastics that are not mechanically recycled. These can produce everything from chemical feedstocks to specific monomers to make new plastics. We see this as a potential game changer.

In addition, we'll need to find ways to motivate more consumers to participate. Well over 98% of the U.S. population can recycle plastic bottles, but the collection rate is hovering around 30%.

What role will new technologies play?

Innovative, new technologies are being developed to convert non-recycled used plastics back into basic building blocks (i.e., monomers) that can be used as the feedstock to make new (or "virgin") plastics. One example is a company (Agilyx) which recently launched a first ever facility to convert polystyrene (PS) into styrene monomer. And PS material producer Americas Styrenics is purchasing that material to make new PS resin. We expect to see a lot more of this type of partnership and innovation where other plastics will be converted back into basic components, and plastics producers and other manufacturers will use them to create new plastics, industrial chemicals and fuels. Other companies working to convert used plastics into chemical building blocks include RES Polyflow, Vadxx Energy, and Renewlogy.

What can be done to bring recycling to small, rural U.S. communities?

No question this is a challenge. Solutions will involve new approaches to partnerships, technology, and logistics. Communities across the U.S. are very different, and we can't take a one-size-fits-all approach to recycling. Many solutions will need to be scalable and tailored to fit the needs across a wide range of communities. We look forward to working with states and communities to ensure rural areas are also able to recycle and recover their materials.

How do ACC's goals align with those set by PlasticsEurope?

While the U.S. and European systems, economics and infrastructure are different, the approaches taken by ACC and PlasticsEurope are substantially similar. For example:

2040: Our 2040 goal and PlasticsEurope's 2040 goal are the same.

2030: PlasticsEurope has set a goal that 60% of plastics packaging will be reused or recycled by 2030. Our goal is for all of plastics packaging to be considered recyclable or recoverable by 2030.

Our 2030 goal is more about increasing access to recycling and recovery programs, whereas PlasticsEurope's goal is more about increasing reuse and recycling rates. In addition, our 2030 goal is about increasing the types of packages that can be recycled and increasing access to recovery programs for plastic packaging that cannot currently be mechanically recycled.

What is a circular economy?

Though there is more than one definition of a circular economy, one of the most cited (and one which we think provides a great starting point) comes from WRAP UK:

"A circular economy is an alternative to a linear (make, use, dispose) economy in which we keep resources in use for as long as possible, extract the maximum value from them while in use, then recover and regenerate products and materials at the end of each service life.¹"

A circular economy thus seeks to optimize a full range of environmental and societal outcomes by designing for greater efficiency, and reusing or repurposing what we can. Plastics makers embrace the pursuit of a more circular economy. And, guided by life cycle analysis, business and policy decisions will thereby increasingly conserve resources, reduce waste, improve recycling rates, reuse more products, and maximize the value of resources and materials.

While plastics already contribute to improved overall sustainability, we recognize more must be done to increase the recycling, recovery and reuse of plastics under a circular economy construct. This will include collaborating with innovators to develop new products designed for greater efficiency and recycling. And we will work to develop technologies that better separate materials and develop systems that break down used plastics into their basic chemical building blocks, extending the life and the value of these molecules as raw materials that can be manufactured into entirely new products.

Expanding and updating our infrastructure will accelerate our move toward greater circularity, keep plastics out of our oceans, and enable us to use these valuable materials to further improve living standards around the world.

What does a circular economy mean for plastics?

Plastics already deliver exceptional sustainability benefits by helping us do more with less, including extending the freshness of healthy foods, to delivering medical and personal care products that are safe and sanitary, to driving further on a gallon of gas. Pursuit of greater circularity will help improve

¹ Waste and Resources Action Programme, or WRAP UK, "What is a Circular Economy?": <http://www.wrap.org.uk/about-us/about/wrap-and-circular-economy>

the sustainability of plastics by focusing additional attention on post-use solutions, while preserving the benefits society needs.

The circular economy recognizes that even used plastics have value. It's our hope that growing awareness that recovered plastics can be mechanically recycled into new plastic products, or used as raw materials and converted into a range of chemical feedstocks—will lead to innovative new business models. We're already starting to see that transitioning toward greater circularity is changing how companies do business. For example, plastics resin producers are forging relations with companies further down the value chain, which is helping help to valorize plastics, including repurposed plastics, at each step.

How does life cycle work within a circular economy framework?

Life cycle tools are one of the best ways to measure environmental impacts and our progress toward reducing them. For example, life cycle studies allow us to measure how well we're conserving natural resources (e.g., energy, water) and reducing carbon emissions and waste. And when we're thinking about determining the best ways to use and reuse resources, life cycle studies provide an objective and systemic way to measure them. When combined with natural capital accounting, LCA studies can also help and evaluate costs and benefits. All of these will be important as we move toward greater circularity. A life cycle approach will also prevent us from inadvertently pursuing approaches in the name of circularity that actually result in other, adverse environmental impacts which reduce overall sustainability.

How do circular economy and sustainable materials management (SMM) work together?

The U.S. EPA defines SMM as "...a systemic approach to using and reusing materials more productively over their entire life cycles. By looking at a product's entire life cycle, we can find new opportunities to reduce environmental impacts, conserve resources and reduce costs." Both frameworks are consistent in that they seek to:

- reduce environmental impacts while strengthening our economy and improving our standard of living, and
- optimize resource use, conserve energy and water, and reduce carbon emissions and waste.

However, SMM takes a slightly broader view by explicitly looking across a product's entire life cycle. Thus, a circular economy is an important part of achieving SMM. The goals announced here are consistent with our ambition to pursue results under both frameworks.

What do we mean by "recyclable"?

Under FTC guidelines, a substantial majority (i.e., 60%) of the U.S. population must have local access to a recycling program that collects a particular item for that item to be labeled as recyclable. Although many of today's common plastic packages do meet that threshold, there's still work to be done. A lot of our work will focus on (1) increasing the types of plastic packages that meet the 60% threshold and (2) increasing the percentage of the population with access to these programs.

Examples that already meet the 60% threshold include: bottles, caps, tubs and containers (and PE film packaging via store drop-off programs)². Next we will focus on lids, multi-layer flexibles, and small items (e.g., tubes).

² For a complete list see the [Sustainable Packaging Coalition's Centralized Availability of Recycling Study](#).

In addition to increasing access, we're also working to support the development and expansion of strong end markets for our plastics resources. For example, we are working with the Association of Plastics Recyclers on its "[Demand Champions](#)" project to see more recycled plastics used in durable applications such as pallets, crates, buckets and other similar products. And we're working to remove barriers to the siting of new conversion and chemical recycling technologies that can convert post-use plastics into a range of useful products for a variety of end markets, such as new plastics, base chemicals, lubricants, waxes, other feedstocks for manufacturing, and other raw materials and products.

What do we mean by "recoverable"?

We use the term "recoverable" to refer to the ability of a material to be diverted from landfill and converted into energy, fuels, and other raw materials that become fuels, energy, or new plastics.