Effort seeks to examine PET thermoform recycling

A group organized by the Foodservice Packaging Institute seeks to define the most cost-effective and practical ways to recover this material.

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DeAnne Toto

Municipal Recycling

The Foodservice Packaging Institute (FPI), Falls Church, Virginia, has organized a group that will examine the polyethylene terephthalate (PET) thermoform packaging recycling, noting that it is conducting a study on the PET thermoform packaging stream and defining the most cost-effective and practical pathways for recovery. Through the study, the group says it hopes to establish a common understanding of the most significant opportunities to increase PET thermoform recycling.

According to a report from Grand View Research, the global thermoform packaging market was estimated at $39.86 billion in 2018, growing at a compound annual growth rate of 4.7 percent from 2019 through 2025. PET accounted for the largest share in the material segment of the global thermoform packaging market in 2018. The plastic is used in cups, lids, clamshells, bowls, sandwich, deli, bakery and take-out containers, as well as other types of consumer packaging.

In partnership with FPI, the Association of Plastic Recyclers (APR), the National Association for PET Container Resources (NAPCOR), the Northeast Recycling Council (NERC) The Recycling Partnership and the Sustainable Packaging Coalition (SPC) will pool data and resources to gain a more thorough understanding of this complex issue. Resource Recycling Systems (RRS), Ann Arbor, Michigan, is conducting the study, which it expects to complete this fall.

“Each partner has been working to increase recycling of PET thermosets in different ways, so it’s important to bring all parties together to find a solution,” said Haitha Dempsey, president of the FPI. “With we’re making progress, it just makes sense to combine efforts to define a unified path to increased recyclability for PET thermossets.”

Project partner NAPCOR reports that the volume of PET thermoform material recycled in the U.S. surpassed 100 million pounds in 2018. Most of this volume was captured in curbside PET bottle bins and processed by bottle PET reclaimers that accept them at specified percentages of the bale weight. However, as thermoform recycling increases, so does the prevalence of thermoforms in residential PET bales, bumping up against the limits of PET bottle reclaimed acceptability levels, according to a news release about the study distributed by RRS.

Thermoformed products pose challenges for reproprocessors when commingled with PET bottles. Thermoformed containers sometimes use pressure-sensitive labels that can be difficult to remove in the washing process. They also produce more fines during processing, and their bulk density is different from that of PET bottles, which makes processing these materials together difficult.

The study will further explore this issue as well as other potential PET thermoform recovery pathways as some municipal recycling programs stopped collecting thermoformed containers following China’s ban on postconsumer plastic scrap imports in 2018.

Despite the challenges currently associated with PET thermoform recycling, some reproprocessors are looking into this material. Vermom, California-based rPlanet Earth, a company that processes packaging from recycled polyethylene terephthalate (iPET) using a vertically integrated approach, has partnered with Green Impact Plastics to jointly develop and manage the purchase of postconsumer thermoform bales from California and other southern states.

“We know there is a shortfall of available postconsumer recycled PET to meet stated content goals,” says Dan Gilley, executive director of the National Association for PET Container Resources (NAPCOR), Charlotte, North Carolina. “PET thermosets offer significant performance benefits to consumers and producers and can help increase the overall supply of this valuable raw material. Our research indicates that PET thermosets can and are being recycled, though they do pose some technical and logistical collection and sorting challenges. We are pleased to join with our colleagues to explore and overcome these challenges.”

This project is designed to explore the potential limitations and obstacles, viability, costs and related metrics of PET thermoform curbside recycling and other potential recovery pathways. Recycled PET thermosets can be used to manufacture new PET containers, stamping and other types of packaging, as well as in polymer fiber applications.

“Common food items are sold in PET thermoform containers and the desire of the public to contribute to the environment through recycling drives their expectations to recycle this material,” says Lynn Rubenstein, executive director of NERC; Brattleboro, Vermont. “These packages are being put in recycling containers and are often treated as a contaminant. Finding a positive economic solution to productive recycling will help the industry and the economy.”

“PET thermosets represent a stable feedstock to fuel the growing demand for recycled PET resin,” says Steve Alexander, president and CEO of the Washington-based APR. “We are hearing from more and more markets that are interested in using this recycled material; now we need to figure out how to get it to them.”

This study will use combined partner organization knowledge pertaining to potential technical, logistical and market obstacles to increasing PET thermoform recycling, building on collective work to date, the news release states.

“Americans want to recycle their plastic packaging but don’t always know what is and isn’t recyclable,” says Liz Bedard, senior director of industry collaboration. “The Recycling Partnership, Falls Church, Virginia, “Brands are committed to using more recycled PET in their packaging but need the valuable supply from curbside recycling. Finding the pathway to collect and recycle PET thermosets will allow communities to increase recycling rates and, at the same time, provide a valuable recycled material to the industry.”

“Brands and packaging companies are committed to improving the sustainability of packaging, but we need to ensure a consistent supply of the material to make the recycling work,” said Darrel Collier, executive director of the National Association for PET Container Resources (NAPCOR). “This project is a great collaborative opportunity to find a solution for this critical challenge.”

“I am excited to work with my colleagues and the Foodservice Packaging Institute to build a collaborative solution to increasing the recovery of PET thermoforms,” said Natha Dempsey, president of the FPI. “We know PET thermoforms are an important feedstock to the PET recycling industry and have a major role to play in the future.”

FPI, with Green Impact Plastic to jointly develop and manage the purchase of postconsumer thermoform bales from California and other southern states.

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Adam Gendell, associate director of the Sustainable Packaging Coalition, Charlottesville, Virginia, says, "Working with groups that represent the entire supply chain, we can find recycling pathways for PET thermoforms and improve the sustainability profile of this important type of packaging."

Cortec invests to close loop on its films

Plastic film producer accepts back discarded product to use in its own manufacturing process.

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Benita Taylor

St. Paul, Minnesota-based Cortec Corp. says it is using up to 20 percent recycled content in the production of its vapor corrosion inhibitor (VCI) plastic film packaging. The firm says it patented the technology for making the VCI film using recycled plastic resin more than 20 years ago.

Cortec says it now operates "a vibrant recycling program that produces VCI film, which goes by the VpCI brand, with up to 20 percent recycled film content—a level at which Cortec says it can ensure the quality of newly made VpCI product."

The company says it "regularly manufactures" VpCI film with 15 percent pre- and postconsumer recycled content. This level is "significantly outpacing recent American Recyclable Plastic Bag Alliance (ARPBA) milestone goals of reaching 10 percent recycled content shopping bags by 2021 and 15 percent recycled content bags by 2022," states the firm.

VCI films are considered a specialized market by Cortec, as they are designed to help protect metals from corrosion during shipping or storage. Cortec says it has recycling its in-house VpCI film scrap "for decades" at its plant in Cambridge, Minnesota. Several years ago, Cortec says it extended its recycling program "to a major off-road equipment assembly plant that receives engine components from dozens of suppliers across the United States and the world."

That money-saving program allows the customer to back its VCI film scrap and send those bales to Cambridge for reprocessing into new VpCI film. Cortec says it pays the shipping costs and gives the customer credit in return

"Their suppliers’ garbage is now a revenue stream for their plant," says Mike Gabor, Cortec vice president of sales for Eastern North America, who helped launch the recycling program.

Both parties have overcome "invaluable" challenges, according to Cortec, and made a firm commitment to make the program and establish a true "circular economy," which Cortec says "is not as easy as it is popular."

The company estimates it "is helping save hundreds of thousands of pounds of plastic from the landfill or incinerator, and transforming it into quality new product while reducing carbon footprints for both companies."

Cortec has set up a similar program at its European facility in Beli Manastir, Croatia, which now has its own VCI film extrusion, converting, and recycling center.