Day two of the Northeast Recycling Council’s (NERC) conference focused on “Building Better Recycling Markets” was all about post-consumer recycled (PCR) resin. Additionally, industry stakeholders and attendees continued to express their concerns about the general public’s perceptions of recycling based on recent headlines within the mainstream media.

One article in The New York Times struck a nerve among several attendees at the conference. Just last week, The Times published an article about rising recycling costs and how those costs have prompted several municipalities around the country to shut down their curbside recycling programs. Quotes within the article also referred to recycling as in a “crisis” and “dysfunctional” since domestic markets have been limited on what materials they could export to China and other Asian countries.

Related: NERC Conference Day Two Tackles Polypropylene, Recycling Markets

After one attendee asked the first panel of the NERC Conference how the industry could try to reinvent recycling in the mind of the public after articles like that have surfaced, panelist Liz Bedard, olefins division manager for the Association of Plastics Recyclers (APR), who is also a member of The Recycling Partnership, said: “Where does The New York Times come off saying we have a crisis? We have some problems, but we do not have a crisis.”

Day two of the conference kicked off with a panel on PCR content in the plastics industry before turning to glass, which has become a hot topic of discussion industrywide. Here are some of the key takeaways from the final day of NERC’s Conference, held in Wilmington, Del.

Plastics and PCR

During a panel discussion titled “How is the Plastics Industry Addressing PCR?,” Bedard explained that the industry is currently in the “middle of a perfect storm.” She referred to China’s National Sword and what has been going on with polypropylene (PP), saying 65 percent of collected PP in the U.S.—plastics Nos. 3–7—was exported to China.

“Then, on top of that, we have what I call a tsunami of virgin resins coming our way,” she added. “We know about natural gas and how the price of that has changed so many things. And it has changed recycling as well.”
She noted that older PCR competes directly with virgin materials, which makes it difficult for businesses to determine the exact cost of their products. And because of all the volatility in the market, some communities across the U.S. are dropping residential recycling programs.

Bedard noted a potential solution that kicked off in 2017 to address some of the industrywide issues: APR’s Recycling Demand Champions campaign, which is a call to action for businesses looking to proactively address these problems. In a nutshell, the campaign asks businesses and municipalities to increase PCR in their products, increase domestic demand, boost circular economy and help prevent ocean plastics.

“We want to mitigate our reliance on exporting materials. We don’t want to find ourselves in this situation again. That’s what Demand Champions is all about,” said Bedard.

Fellow panelist John Caturano, senior sustainability manager at Nestlé Waters North America, said plastic is a problem when it is mismanaged.

“It’s a wonderful resource when it is managed properly,” he explained. “I don’t like it when people call it waste and waste management. It’s a resource and resource recovery.”

He added that the U.S. produces about 250 million metric tons of waste a year, which is about what China produces. However, China has a population of nearly 1.4 billion people, while the U.S. has a total population of around 330 million.

“We are an excessive country; we use more paper towels than the rest of the world combined,” noted Caturano. “And that’s fine, we just have to manage things differently.”

He pointed to circular economy and how important it is to consider reuse at the forefront of the design process. Nestlé Waters has set an ambitious goal of producing all its plastic packaging from either renewable materials or recycled polyethylene (rPET).

“You can talk about it, but until you’re really ready to do anything, it’s only talk. It’s only action when you actually put it in there,” emphasized Caturano.

He also noted that the challenge of inefficient resource recovery in recycling systems has a lot to do with lack of infrastructure.

“When you look at the proliferation of plastic, 50 percent of the plastic that has ever been produced has been produced in the last 15 to 20 years,” he said. “It would have taken every bit of effort in our country to increase infrastructure and make changes when that proliferation was happening, but instead, we found cheaper outlets. The bottom line is we were shortsighted in thinking we could keep sending off this stuff and not create our own infrastructure here. And now here we are.”

Then, there is the lack of demand. Caturano stressed that enough companies need to put these kinds of materials back into their packaging by focusing on design.

Glass, PCR and Bottle Bills

During a panel session titled “How is the Glass Industry Addressing PCR?,” Will Sagar of the Southeast Recycling Development Council (SERDC), explained SERDC has been working with the Glass Recycling Coalition to address some of the problems out there.
"We are seeing glass problems arise everywhere," said Sagar. "There's a lot of talk that transportation is the hurdle that can’t be solved, but there are a lot of processors nearby. Quality matters. Currency exchanges matter. Logistics and transportation matter. Seasonality matters—a lot more glass is collected after the Super Bowl."

"I would have never guessed that we would have seen the story of aluminum cans piling up, and it has to do with some of our trade regulations," he added. "China’s barrier is real. It is not going to change, but we are going to recover. We will see these prices come back. Recycling is not dead."

Sagar remained optimistic and pointed to the investments China has made in the Southeast buying its own plants to take in materials and conduct preliminary processing.

"This is a tremendous good side to National Sword," he explained. "For one, that material is going to get cleaned up here. That contamination in that bale is not going to wind up in a waterway in China. It’s going to end up as product here in the United States. There are opportunities here for a lot of new jobs and capital investment."

Panelist Mike Smaha, director of U.S. government affairs for bottle manufacturer Owens-Illinois, noted that part of the problem he has seen is that glass bottle manufacturers have lost part of their shared market to aluminum cans and plastic.

Originally, Owens-Illinois built plants next to its customers—whether they were breweries, food manufacturers, etc. But recently, according to Smaha, a plant in Massachusetts closed, as well as a plant in Atlanta. He also noted a beer plant in Illinois near one of its facilities is slated to close due to decrease in demand.

"Basically, people are drinking less beer," he explained. "The big brand beer guys are selling less and less. Even at the craft beer level, we are losing the glass market to aluminum cans. That is putting pressure on some of the glass plants that have closed."

He added that at the end of the day—whether it's an aluminum can, plastic or glass bottle—it's going to cost more for the recycled content, which means the consumer is going to have to pay for it. Smaha also noted that raw materials will be less expensive depending on where you are in the country. For instance, he said there is a stronger market for glass on the East Coast, but that the industry is struggling more in the Midwest.

"Virgin material just costs less than recycled glass," he said. "Brands end up going with the cheaper product containing less recycled content. Unfortunately, that's just how it works. I do believe that contamination is one of the biggest drivers for our folks. Any ways that we can reduce contamination at the MRF [materials recovery facility] will be passed on along the supply chain."

Smaha pointed out that switching from single stream to dual stream might be the way to solve the contamination issue, or that more states adopting bottle bills could help.

During the Q&A period for this session, Brooke Nash, who works for the Massachusetts Department of Environmental Protection’s (MassDEP) waste and recycling division, said she was surprised to hear Smaha say there wasn’t a problem in the Northeast with glass.

"Another comment is I don’t see how anything other than recycled content is going to solve this situation," stressed Nash. "I am honestly really tired of the glass industry. It’s like everybody points their fingers at somebody else—‘consumers won’t pay for it,’ ‘it’s too expensive,’ ‘facilities are shutting down because there is a decrease in beer consumption.’ And I really don’t see the glass industry stepping up and doing anything rather than talking about it. We don’t want to stop recycling glass in Massachusetts, but it’s 17 to 20 percent of inbound tons at MRFs and when that is going out of the MRF, it’s $60 to $80 per ton. It costs unbelievable amounts of money for that glass to be collected."

"I apologize, I didn’t mean to say it isn’t a problem. It is a problem, that’s why we’re here," explained Smaha. "Massachusetts is still an important source of glass for all my plants on"
He suggested implementing a national bottle bill, in which states would ultimately be on equal footing. Nash then asked about state-enforced content laws where states demand a minimum standard of recycled content requirement.

“I think it gets more complicated because there would be more cooks in the kitchen,” noted Smaha. “I would like to see a nationwide attempt to go at it.”

Jennifer Heaton Jones, executive director for Connecticut’s Housatonic Resource Recovery Authority and a board member of the Connecticut Recyclers Coalition, pointed to Connecticut’s bottle bill, which she said is “probably the worst bottle bill in the U.S.—with only a 50 percent collection rate.”

Smaha noted legislation in Connecticut to modernize the bottle bill and increase it to 10 cents and also increase the handling fee.

“We have a lot of opposition there and the biggest opposition is industry,” explained Jones. “It’s the lobbyists who don’t want to pay a handling fee, yet our distributors are charging that handling fee back to the retailers. But without updating the redemption fee, it’s not successful and we continue to see redemption centers in Connecticut close. We have to expand and modernize these systems. Five cents does not mean what it did in 1975. Nobody cares about 5 cents to go back to the redemption center.”

She added that expansion is needed, but producers and manufacturers have to back these bills.

“We are spending money to process MRF glass because it’s dirty, then we have to process it again,” explained Jones. “So, why not just go consumer to redemption to processor because it’s clean. Why wouldn’t you want that? Most likely because you’re making money off the dirty MRF glass. I don’t know. Until we get everyone on board, we are not going to expand bottle bills.”

NERC is in the process of working on a report focused solely on glass recycling, among other projects.
Technology is entering the waste and recycling industry at a fast pace, making business operations smarter and more efficient. Over the years, technology has helped enhance fleets, collection services, equipment, safety, operations and more.

As we prepare for WasteExpo 2019, May 6-9, in Las Vegas, we have compiled a list of must-attend technology sessions, where you can learn about the latest technologies that are paving the way for the future of the waste and recycling industry.

**Autonomous Vehicles: Are We Any Closer?**

*Monday, May 6 — 9 a.m. – 10:15 a.m.*

Driverless vehicles continue to be a hot topic in the waste and recycling industry—but is the industry any closer to implementing this technology in day-to-day operations? Find out the status of driverless refuse truck implementation, the trucks’ potential contributions to the industry and the challenges that the industry continues to face.

**New Data—Who Dis? What Data Collection Can Do for You**

*Monday, May 6 — 10:30 a.m. – 11:45 a.m.*

How can you plan where you want to go if you don’t know where you are? Data collection is crucial for establishing successful waste and recycling programs, especially in today’s volatile market. It’s necessary to measure and understand what and how much waste is being generated and discarded and why. On top of that, the variances in reporting makes comparisons and benchmarking difficult, with each program having its own system, definitions and reporting requirements. In this session, hear examples of how industry leaders are working toward reporting consistency to take on data measurement and how businesses can use data to identify and reduce their waste and costs to work toward closing the loop on zero waste.

**Composting Infrastructure Development, Air Permitting Requirements, Technology Innovations, and Alternative Technologies**

*Monday, May 6 — 10:45 a.m. – 12:15 p.m.*

- *Survey of Air Permitting Requirements for Composting Facilities Across the U.S.*

Composting facilities are becoming increasingly regulated across the country, particularly for air quality permitting requirements. It is important to know where these requirements stand in the various jurisdictions in the U.S., so facility developers can properly plan any new facilities or expansions. The presentation will include a survey of how compost facility air permitting is presently handled in each of the 50 states. The types of information to be covered include whether air permits are required and under what circumstances, how emissions are regulated and whether they are considered fugitive or not. Discussion also will include whether controls are required for operating equipment, what levels of control are necessary and if the agency has any specific rules for composting.


Anaerobic digesters are becoming more popular as a technology for recycling organic waste and extracting energy in the process. Anaerobic digestion produces an organic byproduct that is unstable and requires aerobic composting to produce a salable product. Green Mountain Technologies has been working to upgrade an aging ASP system to handle digestate. Digestate has many properties that are significantly different than other feedstocks for composting. Digestate typically has higher odor levels, but the odors can be readily oxidized if sufficient air is delivered to the compost. Digestate also has higher levels of ammonia and is typically wetter than green waste or food waste. All these factors must be considered when designing a composting facility that will receive digestate.


This presentation explores the many benefits of demonstration and pilot-scale composting projects. Ahead of spending millions of dollars on organics recycling infrastructure, demonstration (or pilot) programs offer “proof of concept” and the opportunity to test specific composting systems; perfect a site-specific operational program including a training package; understand system functionality in relation to site-specific limitations; gauge incoming feedstock volume, quality and makeup at a manageable scale; understand seasonal capacity and feedback fluctuations; budget creation based on evidentiary information; and the ability to leverage experience to gain funding.

- *From Dine to Swine: How Pigs are Used to Recycle Food Scraps from Las Vegas Strip Hotels, Casinos, and Restaurants—Collection & Processing, Legal & Environmental Issues.*

Moving up the Environmental Protection Agency’s food recovery hierarchy, this presentation focuses on *using food scraps to feed livestock*. Collection, processing and feeding, as well as legal and environmental issues, are discussed.
Learn how organizations like the Natural Resources Defense Council, the U.S. Environmental Protection Agency, the World Resources Institute and The Kroger Co. use data and measurement tools to quantify and improve food waste prevention, reduction and recovery.

### Anaerobic Digestion and Pre-Treatment Technologies for Processing MSW and Source-Separated Organics, Producing Renewable Energy and High-Quality Compost; Safety Management at AD Facilities

**Monday, May 6 — 1 p.m. – 2:30 p.m.**

Presenters will discuss various pre-treatment technologies, anaerobic digestion processing technologies and/or post-processing technologies to deal with organic feedstocks that are contaminated (e.g., municipal solid waste, plastic and other impurities). Discussion also includes how to produce a clean compost meeting the stringent plastic and other impurities standards while enabling maximum diversion from the landfill at the same time.

### Using Data and Technology to Drive Food Waste Reduction

**Monday, May 6 — 1 p.m. – 2:30 p.m.**

A panel of experts, academics and entrepreneurs will discuss how data and technology is being used to develop viable market platforms to address surplus food collection inefficiencies and provide solutions to reduce food waste and ensure recovery of excess food and food scraps.

### Robots and Recycling: A Dynamic Duo

**Monday, May 6 — 1:45 p.m. – 3 p.m.**

Over the past few years, robotics has found its place in the waste industry. Hear from experts and actual robotics users to find out how robots are addressing industry challenges such as safety, contamination, workforce shortage and more. Hear the benefits, challenges and expectations of using this technology to make recycling more effective and accessible.

### Artificial Intelligence and The War on Contamination

**Monday, May 6 — 3:15 p.m. – 4:30 p.m.**

As a result of China’s refusal to accept contaminated recyclables, North American haulers are battling higher prices, lower earnings and weighing the need for operational changes. This has forced haulers to question if they can continue to provide recycling services at a loss and if the only solution is passing cost to customers. This market disruption, however, provides the chance to reexamine and improve current disposal and collection habits with modern monitoring and reporting technology.

Join this panel as they examine modern technologies that are helping stop contamination at the source—improving hauler profitability and driving toward business and municipal zero waste goals. Hear real-world case studies that show how full-scale visibility across waste streams can reliably collect information needed to coach better household and business disposal habits, guide governmental regulations and modify operations to maintain clean streams from start to finish.

### What's New in Waste-to-Energy

**Monday, May 6 — 3:15 p.m. – 4:30 p.m.**

Hear recent case studies on the latest waste conversion technologies that are eliminating waste disposal in landfills while generating new, viable resources and energy.

### Anaerobic Digestion and Emerging Technologies for Processing Organic Waste and Producing Renewable Energy Products

**Monday, May 6 — 4:30 p.m. – 5:45 p.m.**

Presentations will focus on pre-processing equipment and technologies as well as anaerobic digestion and other processes for converting food waste and other organics into renewable energy.

### Food Waste-to-Energy via Anaerobic Digestion and Other Technologies

**Tuesday, May 7 — 10:30 a.m. – 12 p.m.**

While surplus food continues to be produced, as well as pre- and post-plate food scraps that cannot be used to feed hungry people or animals, diversion of these food residuals to other beneficial uses is an important step in the food waste hierarchy. Anaerobic digestion to produce renewable energy and compost/composting to create healthy soils to grow healthy crops are important processes to eliminate the diversion of food waste to landfills and incinerators. This session focuses on technologies to provide additional beneficial uses for food waste.

### Data Analytics and Measuring Success: Do They Go Hand-in-Hand?

**Tuesday, May 7 — 12:30 p.m. – 1:45 p.m.**

Over the past several years, the waste industry has evolved significantly. Traditional recycling facilities have been joined by composters, e-waste processors and anaerobic digesters, all of which have helped make it possible to extend the life of the objects we use every day. But as organizations reach for lofty sustainability goals, like zero waste, a new question emerges: how can you measure success? It should come as no surprise, then, that there are many opinions and conversations around the best way to measure success. Though there is no perfect solution to measuring success yet, it all comes down to utilizing data and analytics. This session will share how the Department of Solid Waste...
Services of Anchorage, Alaska, has developed a performance dashboard that engages staff and the public to drive strategies, measure performance, set goals and automate the extraction of data. Also hear from Rubicon’s vice president of sustainability on which three data points should be used to measure success in the quest for zero waste.

**RFID, PAYT—Are These the Future of Waste?**

*Tuesday, May 7 — 12:30 p.m. – 1:45 p.m.*

We hear about pay-as-you-throw (PAYT) and the “Uber” model of waste collection more and more these days, but how do you set up a program that works for both you and the customer? What role does technology play in this system, and does it really work? This session will share case studies on PAYT trash removal programs and the technologies being utilized, what challenges are faced, what benefits exist and what the end results are.

**Anaerobic Digestion and Composting: Technology Improvements and Optimizing System Design; Organics Collection Strategies and Costs**

*Tuesday, May 7 — 1 p.m. – 2:30 p.m.*

Presenters will discuss the simultaneous use of anaerobic digestion and composting technologies to produce renewable energy and compost products to build healthy soils. They also will discuss methods of organics collection and technologies to optimize route performance and costs of collection.

**Technology Innovations and Other Solutions to the Problem of Wasted Food**

*Tuesday, May 7 — 2:35 p.m. – 4:15 p.m.*

In this session, presenters will discuss how technology has advanced food waste prevention, reduction and recovery of surplus food. Examples of software platforms that are enabling businesses to measure and prevent excess food at the source will be presented. Discussion also will show how technology is playing an important role in facilitating food donation. Examples will be provided of how software platforms are connecting donating businesses with recipient organizations to connect and feed more hungry people.

**SPOTLIGHT SESSION: Navigating Technology in Waste and Recycling**

*Tuesday, May 7 — 3:30 p.m. – 4:30 p.m.*

In today’s climate, agility is critical for companies to stay competitive—you must be able to use technology to make real-time decisions and operate your business efficiently. Software, hardware, smart sensors, mobile devices—how do you navigate the technology that is best for your operation? Join this session to learn the steps you can take to not only implement the right technology but also how to utilize it to make your operations more efficient.


*Wednesday, May 8 — 9 a.m. – 10:15 a.m.*

Waste conversion technologies are increasingly used to produce renewable energy products (i.e., biofuels that have numerous beneficial uses including their role in organics diversion and greenhouse gas reduction). For example, compressed natural gas is a fuel that can be used in place of gasoline, diesel fuel and propane/LPG, and renewable natural gas is a biogas that has been upgraded to a quality where it becomes possible to distribute the gas to customers via the existing gas grid. Presenters will discuss technologies, processes, best management practices and the benefits of biofuels.

**Data, Drones and Case Studies: The Latest Trends in Landfill Management**

*Wednesday, May 8 — 10:30 a.m. – 11:45 a.m.*

This session will address the latest tools and trends being used in landfill management and will focus on four different case studies.

**Innovative Waste Conversion Technologies for Processing Bio-Waste and Creating Renewable Fuels and Energy – Part 2**

*Wednesday, May 8 — 1 p.m. – 2:30 p.m.*

Waste conversion technologies are increasingly used to produce renewable energy products (i.e., biofuels that have numerous beneficial uses including their role in organics diversion and greenhouse gas reduction). For example, compressed natural gas is a fuel that can be used in place of gasoline, diesel fuel and propane/LPG, and renewable natural gas is a biogas that has been upgraded to a quality where it becomes possible to distribute the gas to customers via the existing gas grid. Presenters will discuss technologies, processes, best management practices and the benefits of biofuels.

**Small Scale and Scalable Food Waste Recycling Technologies, Equipment for Food Waste Generators**

*Wednesday, May 8 — 4:15 p.m. – 5:45 p.m.*

Speakers will discuss small-scale composting and processing systems designed for commercial establishments, institutions and residential processing of food waste. Selected systems are scalable to process residuals from multiple establishments.

**Technologies and Equipment for Managing Odors at Organics Recovery Facilities; Pre-Treatment Equipment for AD**

*Wednesday, May 8 — 4:15 p.m. – 5:45 p.m.*

Odor control is one of the most critical issues in the organics and waste industry in general.
Presenters will discuss various strategies, technologies and equipment for odor control and how they are used to avoid and/or resolve issues at organics recovery facilities.

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