

THE FOAM FIGHT

THOSE BANNING EXPANDED POLYSTYRENE SAY THERE'S LITTLE DEMAND FOR THE RECYCLED PRODUCT. THAT'S INCORRECT, RECYCLERS SAY, AND WITH BETTER EDUCATION AND SOME INVESTMENT IN INFRASTRUCTURE, BUSINESS COULD BE SWELL.

BY KATIE PYZYK

It was an offer New York couldn't refuse. That's what Dart Container Corp. (Mason, Mich.) thought when it said it would cover the setup costs for adding expanded polystyrene to the city's curbside recycling program. Indianapolis-based Plastic Recycling Inc. agreed to a long-term contract to process the foam and pay the city for it; the city would pick up the foam curbside with other commingled recyclables—eliminating the need for new collection trucks—and its recycling contractor, Sims Municipal Recycling (Brooklyn, N.Y.), would sort the materials.

New York did refuse, however, and in January it became the latest municipality to impose a ban on most single-use EPS food containers, frustrating those in the EPS industry who see this defeat as a setback in meeting the growing demand for the material.

A LOVE-HATE RELATIONSHIP

Since Dow Chemical Co. (Midland, Mich.) invented it in 1941, Americans have engaged in a love affair with expanded polystyrene, or Styrofoam. The material pervades our convenience-seeking society and has become nearly impossible to avoid. It holds takeout meals, buffers hands from scalding coffee, insulates pipes, and cushions bike helmets.



PHOTOGRAPHS FROM GETTY IMAGES; BACKGROUND, APRIL 11; CUP, DANIEL BURCH; CLAMSHELL, YIAP SEE EAT

Over time, that sentiment has turned to disapproval in some quarters, and calls to eradicate foam recently have intensified. Environmentalists have rankled at the mention of EPS for decades, claiming it's difficult or impossible to recycle; there are few markets for postconsumer material; and it does not break down in landfills. EPS industry insiders say those recycling claims are outdated and incorrect. More than 140 businesses in the United States currently recycle EPS or manufacture products from recycled foam, and those numbers are likely to grow.

New York became the largest, most prominent city to ban EPS when it announced the measure in January. Similar bans preceded it in more than 100 other U.S. jurisdictions—including Portland, Ore.; San Francisco; Seattle; and Washington, D.C.—most of them occurring in the last five to eight years.

“People think they’re doing the right thing with these bans. Unfortunately, it’s very misguided, and a lot of misinformation gets thrown around when these bans come up,” says EPS Industry Alliance (Crofton, Md.) public relations manager Tyler Merchant. He cautions that bans “are going to have more negative consequences.”

A ban “makes our job harder,” says Barbara Sherman, who with her husband, David, founded the EPS recycling business ReFoamIt (Leominster, Mass.), “because we have to work much harder to reach out to people and explain that it can be recycled and we have been recycling it.”

New York determined that adding the material to its existing curbside recycling program could not be accomplished “economically,” a conclusion questioned by those who opposed the ban. “It doesn’t make any sense,” says Michael Westerfield, corporate director of recycling programs at Dart. “We guaranteed a market for the material; we proved to them it could be recycled; it wasn’t going to cost them any money; it would recycle far more products than they’re going to ban ... Why wouldn’t they want to do it? The only explanation is politics.”

Time and again, foam industry participants blame politics for the spread of EPS bans. The image of a foam cup blowing down the street or bobbing in a river creates an undesirable, indelible image the public cannot seem to shake. Rather than undertaking the difficult task of educating the public about recycling EPS, banning it gives politicians a quick way to gain public approval.

“EPS is a very visible item. The public has

... chosen it as one of the poster boys of terrible things,” says consultant Patty Moore, principal of Moore Recycling Associates (Sonoma, Calif.). Trying to educate the public about product life cycles and the additional resources some EPS alternatives require sometimes seems futile, she says. “People don’t want to be educated to the fact that the alternatives [to EPS] are worse for the environment. They want it easy, and politicians want it easy.”

EPS was not always recycled, but that also was the case for other consumer packaging materials before their recycling became mainstream. Consider shelf-stable and refrigerated cartons, which up until the last decade were not widely recycled. Now approximately 50 percent of U.S. households have access to carton recycling, although not everyone has gotten the message.

Foam recycling proponents have undertaken a similar fight to educate the public and build more infrastructure for its collection. They want to debunk two of the main misconceptions—that postconsumer EPS is too contaminated and it lacks markets—while addressing some of the real barriers the industry must overcome to achieve significant growth.

IS CONTAMINATION A CONCERN?

In its research report, New York repeatedly cited the “dirty” state of single-use EPS containers as a reason for banning them rather than recycling them. But Foodservice Packaging Institute (Falls Church, Va.) president Lynn Dyer points out that “contamination is an issue across the whole recycling board, so it’s an opportunity to clean up and work together with collectors and processors of other commonly recycled items to make sure that everything is cleaner when it’s recycled.”

As Los Angeles learned, some contamination in curbside foam recycling is not necessarily a deal-breaker. When the city conducted a pilot program about eight years ago at its six materials recovery facilities, the program operator informed the city that removing all contaminants—such as stickers, tape, and greasy food debris—was too labor-intensive and expensive. Since then, the city has accepted “clean” foam curbside—foam that is free of contaminants like oil, grease, and



food residue—and its MRFs sell the recycled product to Mexico. Contaminated EPS is sorted out and sent to a local landfill.

Dart does not view contamination as a deterrent. For years, the company has been cleaning and processing “dirty” foam—including items like coolers, meat trays, egg cartons, and takeout food containers—at two of its existing facilities, and a third it partners with in Indianapolis—the one that offered to take New York’s foam—also will have cleaning capacity when it goes live later this year. The company wants to partner with municipalities looking to recycle foam food containers and other dirty foam.

GROWING MARKETS

New York also questioned whether a sufficient market exists for postconsumer EPS. “Their arguments ... that there are no markets are flat-out wrong,” Dyer says.

Industry analysts predict global demand for EPS will not wane for years, but it is currently slowing down because demand in China, the largest market for EPS resin, has diminished. China has been a significant EPS consumer due to its focus on construction—where foam serves a plethora of insulation purposes in both new construction and remodeling—as well as packaging and exporting. Northeast Asia, and China in particular, constitutes roughly 60 percent of demand in the overall virgin EPS market, according to Priya Ravindranath, a principal analyst of PS and EPS at consulting firm IHS (Englewood, Colo.).

Since roughly 2012, China’s economy has been cooling. Ravindranath notes the economic slowdown shrunk the country’s EPS market by nearly 3 percent in 2014. But as China and other developing economies slow their growth, she says, “the focus now is entirely on the developed regions—and that’s North America—really leading the growth.” North America’s virgin EPS

market indeed is booming, registering 8-percent growth in 2014. Ravindranath predicts a strong showing in 2015 as well, with at least 4- to 5-percent market growth.

Research firm Markets and Markets (Dallas) predicts the global EPS market will experience a compound annual growth rate of 8.2 percent through 2018. An uptick in the North American construction industry is largely fueling the increase. The other major industry driving North America’s gains is packaging—particularly appliances and electronics packaging.

As the virgin EPS market trends upward, the demand for recycled resin is expected to follow. “If you look at virgin demand for polystyrene, it’s growing pretty significantly. So for that reason, I expect the recycled demand also to continue to grow. There’s no reason why it wouldn’t,” Moore says.

According to a market analysis FPI commissioned in 2014, the recycling process turns EPS back into PS, which manufacturers can then use to make either PS or EPS products. The report cites a Freedonia Group (Cleveland) study, which estimates domestic recycled PS demand in the United States will grow 8 percent a year until 2016. The study put recycled PS demand at 31 million pounds in 2011 and expects a jump to 47 million pounds in 2016, increasing in 2021 to a predicted 68 million pounds.

U.S. companies increasingly use recycled EPS to manufacture a variety of products, such as crown molding, surfboards, CD jewel cases, synthetic lumber, and glue. One of the most popular uses for the recycled resin is manufacturing picture frames. That’s what MCS Industries in Easton, Pa., has done for the past eight years. Owner Richard Master says in addition to making the company’s products more environmentally friendly, using recycled resin reduces costs.

“It’s cheaper for us to reprocess [EPS] into a resin that then can be used in the manufacture of a picture frame,” he says. “Virgin resins are a lot more expensive than reprocessed resins. We looked at the market in reprocessed, and then we decided that it would be a good idea for us to put in a recycling operation ourselves.”

FPI formed the Foam Recycling Coalition in 2014 in response to a surge of requests for recycled foam. In less than a year of existence, the group accrued more than a dozen members. “Companies started coming out of the woodwork saying, ‘Hey, I’m looking for recovered polystyrene foam, how can I get my hands on more of



INNOVATIVE SOLUTIONS for EHS Compliance

TURNKEY COMPLIANCE | MAXIMIZE PROFIT | INCREASE PRODUCTIVITY | PROVIDE RISK MANAGEMENT



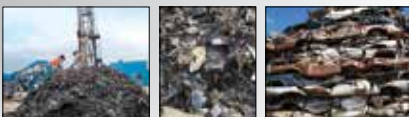
INDUSTRIAL GRADE ENVIROMENTALITY



Visit us at Booth
#712

www.envirosure.com
P: 480.784.4621
F: 480.784.2207
E: info@envirosure.com

Got ASR Problems? **We Have Solutions!**



Envirosure Solutions is the Industry Leader in

- Sampling and Analysis Protocols
- Representative Sampling and Analysis
- Cost-Effective Profiling, Transportation & Disposal

Call Us Today!



Recyclers sort foam of different types before loading it into a densifier for air removal and compression into compact blocks. Postconsumer collection of EPS grew 98 percent from 2012 to 2013.

it?” Dyer says. “If the demand is there, we need to find a way to make sure we’re meeting that demand and helping to increase the recycling of EPS.”

Even though bans put some EPS manufacturers and recyclers on edge about the future supply of this material, industry analysts point out most bans cover only packing peanuts and single-use food containers, which estimates indicate are less than 10 percent of the market. Bans are “not really causing significant damage to the market as such because most of the growth in EPS really is coming from the building and construction side, and electronics and appliance packaging,” Ravindranath says. “Also, while several cities pass bans, implementation of these bans is slower and not as effective. While the ban in New York City will set a precedent for several other cities and have an impact on consumer perception, the impact on demand currently will be small.”

That bodes well for EPS recyclers, considering much of their stock currently comes from industrial and commercial customers. And the collection of EPS for recycling is growing. In its *2013 EPS Recycling Rate Report*, the EPS Industry Alliance showed

recovered EPS processing in the United States increased from 93.7 million pounds in 2012 to 127.3 million pounds in 2013, based on data from 41 EPS manufacturers and recyclers.

Recyclers say while the EPS recycling industry grows overall, they particularly see a trend toward recycling more postconsumer material. At ACH Foam Technologies (Denver), which has been recycling clean foam since the 1980s, “a decade ago, a majority of our product, the recycled content, was primarily driven by internal scrap,” says Vice President of Operations Todd Huempfer, but “...in the last five years in particular, our postconsumer portion has grown at a faster rate than postindustrial.”

The EPS Industry Alliance also notes the trend of increased postconsumer foam recycling. Its reports showed a more than 4-percent decrease in the amount of postindustrial foam being recycled from 2012 to 2013, but a 98-percent increase in the amount of postconsumer foam being recycled during that same time period. Postconsumer foam made up more than 57 percent of all EPS processed in 2013, according to the report.

BARRIERS TO GROWTH

Despite the rosy outlook for recycled EPS demand, business inhibitors still remain. For example, plummeting oil prices affect EPS prices, but the relationship between the two is complex. With the crude oil price declining, the price of benzene (a key EPS feedstock) also has seen a significant drop since its peak in July 2014. While EPS prices have decreased slightly, the decrease is not in line with the benzene or styrene price decreases. This has been due to a tight EPS market in North America—strong demand coupled with supply issues, Ravindranath says.

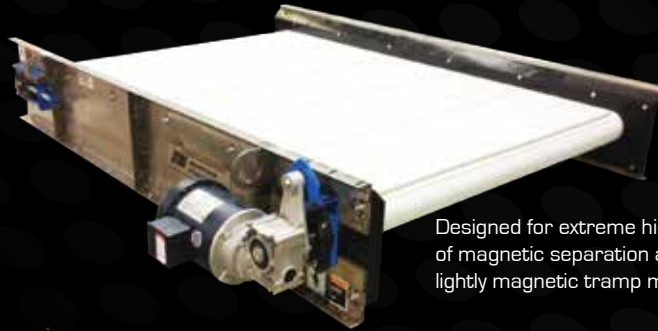
Startup costs for EPS recycling also are a factor that discourages both private businesses and local governments from pursuing this material. A densifier, an essential piece of equipment for EPS recycling, typically costs at least \$20,000 to \$30,000. EPS is about 98 percent air and has a “memory”; it springs back to its original product form if its bonds are not completely broken by air removal. Standard balers or compactors can crush EPS to a certain degree, but they do not process it nearly as thoroughly as densifiers, which boast compression ratios of up to 90 to 1.

Densifiers come in a variety of sizes and either mechanical or thermal versions. Mechanical densifiers exert pressure on EPS to break its cellular structure and force out air. They typically are available as hydraulic or screw-drive machines. With the air removed, EPS becomes a PS block capable of maintaining its shape during shipment.

Thermal densifiers use heat to break down the EPS cellular structure and release air. The foam melts into a taffy-like substance that can be formed into blocks or other shapes. It requires cooling before shipment, but it maintains its shape better than mechanically densified EPS. Thermal densifiers can better handle colored and contaminated foam, but they produce potentially dangerous temperatures and fumes. Processors who deal with dirty EPS also must invest in a washing system

Get the Metal Out!

Super High Intensity Separation Conveyor (HISC)



Designed for extreme high gauss fields of magnetic separation and removal of lightly magnetic tramp metal fines.

 **BUNTING** Magnetics Co.

Industry leader in the separation of ferrous from non-ferrous in the recycling industry

(800) 835-2526

buntingmagnetics.com

©2015 Bunting® Magnetics Co.



MANITOBA CORPORATION
Our 99th Year

PERFORMANCE AND REPUTATION MAKE THE DIFFERENCE

- BARE COPPER • BURNT COPPER WIRE
- #1 INSULATED COPPER WIRE
- COPPER TUBING • STATOR BARS
- TRANSFORMER COILS
- LEAD COVERED COPPER CABLE

www.manitobacorp.com

bshine@manitobacorp.com

SERVICING THE METAL INDUSTRIES OF NORTH AMERICA SINCE 1916

ISO9001:2008



BUFFALO
(716) 685-7000
Fax (716) 685-7008

ST. LOUIS, MO
(314) 436-0199
Fax (314) 436-1062





Compressed foam exits a mechanical densifier, where a worker cuts it into smaller pieces for shipment to manufacturers. The recycled material can become PS products such as crown molding, picture frames, CD jewel cases, and synthetic lumber. Alternatively, it can get turned back into EPS and used for insulation, surfboards, and packaging.

to remove contaminants before densification.

FRC launched a grant program this year aimed at easing the financial burden of investing in the necessary equipment to add foam to an existing recycling program. The grant program particularly targets municipalities and MRFs, but FRC will consider all applicants who will boost EPS recycling in the United States and Canada. Similar grant programs exist through state and municipal governments across the United States. For more information about FRC's grant program, visit www.fpi.org/foamrecyclinggrant.

On top of machinery costs, recyclers need to factor in expenses for transporting the EPS. Foam weighs next to nothing, but it takes up significant space in a truck, prompting some recyclers to decide the fuel costs of adding EPS to a commingled curbside collection stream do not add up.

Once an EPS recycling business launches, just as with any new business, the challenge of staying afloat can be overwhelming. The Shermans understand that all too well. They got their start

EPS INDUSTRY ALLIANCE

Cash for Cats!

Catalysts can be worth hundreds or thousands of dollars a piece. At Recycalytics we unlock the value. Call us for pricing on spent emission control devices and other spent catalyst materials.



Diesel Particulate Filters & Automotive Cats

- Municipal & State Garages
- Automotive Service Centers
- Scrapyards
- Bus and Truck Fleet Garages
- Air and Sea Maintenance Yards

Industrial Squares & Rounds

- Power Generators
- Rug Manufacturers, etc...
- Coffee & Baking Industries
- Stationary Power Devices
- Pipelines

Recycalytics
The Catalyst Recycling Experts

Call Bruce at 1.800.786.5051 ext. 135
Recycalytics | 502 York St. | Elizabeth, NJ 07201
www.recycalytics.com
Recycalytics is a Metalico Company

by collecting foam for another processor in Rhode Island. They say that without a network of pre-existing connections from their time assisting the other processor, ReFoamIt might not have gotten off the ground. Building up enough business to turn a profit takes time, and they are still working to achieve that goal. "We really need to double what we're doing now to make this sustainable," David says.

REACHING A CRITICAL MASS

A great irony of the New York ban is that many EPS recyclers say they're having trouble coming up with enough foam supply to meet increasing recycled product demand. Huempfer sees it at ACH Foam Technologies. That's why the company spends time forming new partnerships and educating customers about the merits of foam recycling. "Many municipalities in California recycle EPS whereas they did not a decade ago," he says. "It's purely an education effort within our industry that supported that. As you see large cities look to implement plastic or polystyrene bans,

it's an opportunity for our industry to educate them on the ease of recyclability of our product."

The Shermans also prioritize education, both with municipalities and companies, by emphasizing how bringing EPS to ReFoamIt can cut their landfill costs. A 40-cubic-yard tractor-trailer of EPS weighs about 450 pounds, they explain, compared with 3 to 4 tons if it were filled with waste. Landfills typically charge a flat rate for a truckload regardless of weight, David points out, so when businesses separate light, bulky foam from their trash and bring it to him, it's a mutually beneficial outcome. "We've reduced the trash volume and costs for companies quite a bit by taking all of their foam, for probably a third of what they're paying for trash," he says. Customers can drop off EPS at the ReFoamIt facility or a collection event for free, or they can pay a small fee for the Shermans to pick it up. Currently, the business does not purchase foam from suppliers.

MCS Industries is so interested in enlarging its recovered foam supply that it partners with

THE BEST INVESTMENT FOR NON-FERROUS SCRAP RECYCLING

Cable Strippers and Shears from DELTAX

A Range Of Models To Suit Your Needs And Your Budget!

DTX 300
w/ 12" Blades



DTX 400
w/ 16" Blades



CSX SERIES

Cable Strippers that are fast and effective for the easiest route to recover your non-ferrous cable scrap.



Hydraulic Shears to suit your needs and budget. All built to the highest quality. From sizing copper tube and aluminium extrusion, to heavy materials, they are built to work.

DTX 600
w/ 24" Blades
Electric Foot Pedal
Hydraulic Hold Down



DTX 4/600
w/ 24" Blades

Since 1919



GENSCO AMERICA, INC.

5307 Dividend Dr., Decatur, Georgia 30035 • Tel: 770 808-8711 • Fax: 770 808-8739

GENSCO EQUIPMENT (1990) Inc

53 Carlaw Ave., Toronto, Canada M4M 2R6 • Tel: 416 465-7521 • Fax: 416 465-4489

email: info@genscoequip.com • url: www.genscoequip.com

ACROSS USA 800 268-6797

potential suppliers, helping them finance densifiers. “There are really great opportunities for these various sources to densify it and sell it to us rather than ... put it into a landfill,” Master says. “This is really a great way to make some revenue from a stream if you have sufficient quantities” to warrant not only the technology that is required, but also the effort. “It has been done—it has been done successfully,” he says.

The key is building critical mass, these recyclers and consumers say. Enlarging the network of EPS recyclers and collection points means there will be less distance to travel with each load of foam. Dart believes the multiple-location concept works; it now operates 85 foam drop-off points across the United States in addition to running a foam mail-back program. ACH Foam Technologies also touts the benefits of having multiple collection sites; it has eight U.S. locations and continues searching for areas to grow.

“It’s becoming a big opportunity for recyclers,” Huempfer says. “When you can get 30 to 40

cents per pound for your densified product,” as suppliers were in early February, “there’s some merit in recycling that goes beyond goodwill.”

What’s the potential size of the recovered foam supply? The U.S. Environmental Protection Agency (Washington, D.C.) estimates Americans throw away 25 billion foam cups each year. That doesn’t even take into consideration other food containers, much less packaging or construction foam. All that EPS could be providing steady work for recycling businesses instead of heading to landfills.

“I think the amount that is recycled is going to continue to increase,” Merchant says. “If there is an open market that can potentially be profitable, people will do it.”

With more education and investment in the needed infrastructure, expanded polystyrene could be the recycling industry’s next big thing rather than an endangered species. ■

Katie Pyzyk is a Scrap contributing writer.



**VISIT US AT
BOOTH #623**



Serving Your Equipment Needs For Over 35 Years!



Baler Feed System



Can Crusher



Non-ferrous steel pan



Hydraulic Tipper



- Hydraulic Tippers
- Sorting Systems
- Custom Equipment
- Screens
- Blowers
- Glass breakers
- Can Crushers
- Can Buyers
- Baler Feed Conveyors

(800) 745-4736 www.remfg.com