

MEMORANDUM

TO: Lynn Dyer
President
Foodservice Packaging Institute

FROM: Robin Cantor and Joanne Jordan

SUBJECT: Market analysis of end uses for recycled post-consumer expanded polystyrene foodware

DATE: October 9, 2014

I. Summary

Expanded polystyrene (EPS) is a common plastic used in widely varying applications such as foodware, protective packaging and building materials. Recycling post-consumer EPS foodware is an important component of managing solid waste from these products but its economic success depends on sustainable end-use applications. BRG was asked by the Foodservice Packaging Institute (FPI) to examine current information on EPS foodware recycling and address the foundations supporting the markets for the recycled post-consumer EPS foodware. One key aspect to note is when EPS is recycled into pellets, the pellets are polystyrene (PS) because they are no longer expanded. PS pellets can then be used to manufacture EPS products or PS products. The result is a broader market for recycled post-consumer EPS.

BRG reviewed reports and data relevant to the size and growth of the intermediate and end-use markets processing or using the recycled material. BRG also evaluated the potential growth in the end-use applications and exports of the recycled materials. A number of economic and technical factors affecting the demand for the recycled material are important for understanding the potential growth.

Regarding supply and demand for recycled EPS, BRG readily identified 29 companies that use the material to make new products (end-users), 28 companies that process and also are end-users, and 80 processors. Current improvements in equipment for washing, densifying and otherwise handling post-consumer EPS are expanding the market reach of recycled EPS foodware so it competes directly with the EPS non-foodware feedstock. Enhanced washing technologies, in combination with steady collection of post-consumer EPS foodware, have created real and sustainable markets for recycled EPS foodware. Moreover, these markets are expected to grow as demand for recycled EPS materials increases.

II. Assignment and Approach

Like other plastics, recycling post-consumer EPS foodware is a process that depends on many supply steps including collection, baling or densification, transportation, decontamination and processing, and finally sale to an end-user. There are varied and effective programs to address the collection and transportation steps in the supply chain, but due to historical concerns about food contamination, commercial applications capable of using recycled EPS foodware have been considered by some to be

questionable. BRG was asked by FPI to investigate the current and likely future state of the end-uses for recycled EPS foodware and address whether there are viable, sustainable, and growing markets for its use.

BRG collected information from industry studies and inventories of end-users and processors relevant to post-consumer EPS foodware to evaluate the current and potential market opportunities for the recycled materials. The scope of BRG's analysis was primarily focused on the market potential for recycled post-consumer EPS foodware in the U.S. and Canada. Other sources of feedstock (e.g., post-consumer EPS non-foodware) and global trends in related markets (e.g., virgin PS and virgin EPS) are also referenced in this report. The scope of analysis was broadened when it was necessary to understand market conditions that also would affect recycled EPS or when the data or study did not separately address recycled EPS foodware. BRG also examined how existing recycling operations and innovations in the processing technology have expanded the applications for which recycled materials from post-consumer EPS foodware can compete with other source materials.

III. Background

(a) Post-Consumer EPS Foodware

Expanded polystyrene (EPS), also commonly called "foam," is a type of plastic that is very light, comprised of 95 percent air.¹ It is often marked with the number 6 recycling code.²

EPS foodware refers to products made from expanded polystyrene. These products typically include single-service, disposable consumer food containers such as hot and cold cups, plates, bowls, egg cartons, hinged take-out containers, meat, produce and poultry trays, and lunch trays. EPS foodware is commonly used by foodservice establishments like restaurants and fast-food franchises for take-out food; and as packaging used by food retailers like supermarkets and grocery stores.³

In addition to foodware products, EPS is also used commercially in non-foodware applications, such as building materials and in protective packaging for electronics, furniture, electric appliances and other delicate items because of its insulating properties.⁴

EPS products are prevalent in use, but due to their light weight make up a small fraction of total solid waste volume. According to the U.S. Environmental Protection Agency's (EPA) 2012 report on municipal solid waste generation, recycling, and disposal, polystyrene (both rigid and foam) including foodware represents less than one percent of the discards in the municipal solid waste stream in the U.S. by weight.⁵

¹ Jim Johnson, *Plastics News*, September 2014, p. 2; BRG research.



³ *Use and Disposal of Polystyrene in California*, December 2004, p. 21.

⁴ Freedonia Group, *Recycled Plastics to 2016, Polystyrene - Resin Overview*.

⁵ U.S. Environmental Protection Agency, *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Tables and Figures for 2012*, pp.2, 8-9.

(b) *Current State of Post-Consumer EPS Foodware Recycling*

Post-consumer recycled plastics are plastic products that are collected after their intended end-use, reclaimed, and reprocessed into pellets made up of base resins.⁶ The pellets are then used to make other plastic or plastic-containing products.⁷ Recycling of finished plastic products by commercial and industrial consumers is also included as “post-consumer recycled plastics.”⁸ In contrast, reuse and recycling of plastic scrap and trimmings from manufacturing processes are considered “post-industrial” recycling, and are not considered in this analysis.⁹

A 2013 EPS recycling rate study conducted by the EPS Industry Alliance found that, in the last three decades, EPS recycling has demonstrated stable, incremental growth and steady end-use market developments attributable to advances in EPS recycling technologies and collaborative collection programs.¹⁰ For example, some recyclers in the U.S. are taking plastic foam and recycling it into new products such as picture frames.¹¹ While a number of cities in the U.S. are collecting plastic foam from curbsides as part of their recycling effort,¹² other cities accept EPS only at drop-off locations, or they do not accept EPS foodware for recycling.

Because of its light weight, the cost associated with transporting the EPS can affect the economics of its collection and processing.¹³ Materials used for food packaging have the additional disadvantage of being contaminated with food residue. As a result, there have been cost and quality concerns inhibiting the growth of end-uses for recycled EPS foodware.

When collected for recycling, EPS foodware is typically collected at drop-off centers, or picked up curbside in commingled single stream recycling programs and transported by truck, rail, or both, to material recovery facilities (MRFs), where it is sorted from other materials and ultimately placed in a bunker with other EPS, compressed and baled, and then sold to brokers or processors. Intermediary companies or end-users purchase bales or densified pallets of the EPS and then remove contaminants, wash, dry and put through extruders to create pellets, or resins, which are remolded into new EPS packaging or different PS plastic consumer goods with recycled content, such as picture frames and plastic moldings.¹⁴

Recycling rates of post-consumer EPS foodware and non-foodware have increased due to support from the EPS industry, changes in collection programs and public marketing campaigns. For example, curbside EPS foodware and non-foodware recycling in California has expanded to 65 communities in

⁶ Freedonia Group, *Recycled Plastics to 2016*, Introduction, p. 1.

⁷ Freedonia Group, *Recycled Plastics to 2016*, Introduction, p. 1.

⁸ Freedonia Group, *Recycled Plastics to 2016*, Introduction, p. 1.

⁹ Freedonia Group, *Recycled Plastics to 2016*, Introduction, p. 1.

¹⁰ EPS Industry Alliance, *2013 EPS Recycling Rate Report*, p. 3.

¹¹ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

¹² Mark Hendricks, *American Recycler News*, March 2014, p. 1.

¹³ Freedonia Group, *Recycled Plastics to 2016*, Executive Summary, p. 2, and section entitled, *Recycled Polystyrene Collection & Markets* (1 of 2).

¹⁴ BRG research.

2014, up from 35 communities in 2010.¹⁵ Baltimore opted in December 2012 to provide a drop-off collection location for EPS foodware rather than implement a proposed ban.¹⁶ As another example, Chick-Fil-A is recycling EPS cups at more than 400 locations, planning to expand the program to all of its 1,700 locations by 2015.¹⁷

The recycled plastic industry in the U.S. is characterized by regional small- to medium-sized companies.¹⁸ To facilitate market transactions, a number of trade associations, industry groups, and trade publications focused on plastics recycling share information about new technologies, processes and equipment, and assist in connecting suppliers and buyers of recycled EPS. Attachment A contains a listing of readily found associations and directories that assist processors and buyers in identifying each other and developing the end-use markets.

(c) Technical and Economic Challenges for Market Development of Recycled Product

Transportation and decontamination costs are important factors regarding the sustainability of the markets for recycled post-consumer EPS materials. The cost of collecting post-consumer EPS for recycling can be lowered considerably by reducing the volume of the waste, preferably at the point of origin, before transporting to recycling facilities. Volume reduction is accomplished by using equipment such as balers, compactors and densifiers, which subsequently reduce the cost of transportation.¹⁹

In the particular case of plastic containers for foodservice or food packaging, removing contaminants from the food containers remains a challenge for processors. Historically, a perception exists in the U.S. that EPS foodware is rarely recycled because it is not clean enough, washing contaminants is expensive, and it is less costly to send contaminated material to the landfill.²⁰ On-going research, however, indicates that the food residue in recyclable foodservice packaging is similar to the food residue of other types of food contact packaging that has traditionally been accepted at MRFs.²¹

In addition, recycled foodware and food contact packaging face certain restrictions in their end-use applications. Recycled EPS – like all recycled materials – cannot be used in new foodware applications without first receiving an opinion letter from the Food and Drug Administration (FDA) confirming the material is suitable for use in the manufacture of articles in contact with all food types, as in 21 CFR § 174.5 *General provisions applicable to indirect food additives*.

¹⁵ Mike Verespej, Plastics Recycling Update, February 2014, p. 15.

¹⁶ Mike Verespej, Plastics Recycling Update, February 2014, p. 15.

¹⁷ Mike Verespej, Plastics Recycling Update, February 2014, p. 15.

¹⁸ Freedonia Group, Recycled Plastics to 2016, Executive Summary, p. 2.

¹⁹ Jim Johnson, Plastics News, September 2014, p. 2; BRG research.

²⁰ Use and Disposal of Polystyrene in California, December 2004, p. 4.

²¹ Foodservice Packaging Institute, Take Two: A Second Look at Foodservice Packaging and Food Residue in MRFs, 2014; and Foodservice Packaging Institute, Sorting It Out: A Hands-On Look at FSP Food Residue in Boston, 2013.

IV. Results

(a) Processors and End-Users of the Recycled EPS Material

As explained previously, recycling is accomplished through a supply chain. A processor, or recycler, is an entity that processes plastics to add further value, typically by separating, removing contaminants, washing, and reducing the material in size (creating pellets or flakes). A processor typically sells their product to an end user.

An end user is an entity that buys mixed and/or sorted plastic or processed feedstock from a generator and/or a MRF, and/or a processor and uses the material to make new products.

In its research, BRG readily identified a number of listings that identified processors, end-users, or both of recycled EPS including foodware. Attachment B contains a non-exhaustive listing of 29 end-users, 28 companies that process/recycle and also are end-users, and 80 processors. Some of the products made from the recycled materials include glue, picture frames, insulation board, interior moldings, packaging, and containers.²²

(b) Technological Change in the Production of Recycled EPS Materials

Regarding food contamination, improvements in equipment for washing, densifying and otherwise handling post-consumer EPS foodware are expanding the market reach of the recycled material. Certain processing facilities are adopting technology that allows recycled EPS pellets from foodware to be virtually identical to pellets made from virgin feedstock in material and size.²³ The recycled material produced using these innovations can compete for end-use sales not only with recycled materials made from post-industrial and post-consumer EPS non-foodware and recycled PS, but also with PS and EPS made from virgin materials.²⁴

(c) Estimates of Growth for Recycled EPS Materials

Overall, industry expectations for increasing end-use demand for recycled EPS are positive. Post-consumer and post-industrial recycled EPS is in demand because in many applications it is priced competitively with virgin polystyrene materials.²⁵ Industry studies report that U.S. prices for virgin polystyrene and EPS are expected to increase from the declines experienced during the 2008-2009 period and then grow steadily.²⁶ Rising virgin polystyrene prices have pushed a number of companies to

²² Use and Disposal of Polystyrene in California, December 2004, p. 14; Ninelivesproducts.com (Glu6); BRG research.

²³ Global insulation.com, The Sulzer EPS Process, pp. 1-3.

²⁴ BRG reviewed product data sheets indicating that the recycled EPS pellets from post-consumer foodware were sold to end-users for applications also using virgin PS.

²⁵ Plastics News Reports, Plastic Recycling Market Review and Outlook 2014, North America- Post-Consumer & Post-Industrial, p. 6 (showing prices for virgin and recycled PS); and GBI Research, Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020, p. 320 (showing virgin PS and EPS in lock-step).

²⁶ GBI Research, Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020, p. 320.

incorporate more recycled EPS in their products, such as picture frames, surfboards, interior moldings and nursery products.²⁷

According to David Wilson of RAPAC, a manufacturer of PS beads and the largest recycler of EPS in the U.S., “[a]s the cost of virgin material increases, people realize there is money to be made putting more and more recycled content into their products.”²⁸ The CEO of MCS Industries, Inc., a picture frame manufacturer, agrees that “[t]he motivation is cost because virgin prices for PS have skyrocketed from 40-50 cents per pound to the high 80s and 90s in the last 10 years. Recycled PS is half that.”²⁹ To increase the supply of feedstock for recycling, MCS Industries leases densifiers to furniture companies and other entities that must dispose of post-consumer EPS, allowing the company to double the volume of EPS used in the last five years.³⁰ Likewise, picture frame manufacturer NEPCO cites a higher demand for recycled PS in picture frames because EPS is less expensive than wood. NEPCO officials state, “The only thing that is inhibiting more growth is the supply. We could use five times more material.”³¹

According to GBI Research, the global demand for both polystyrene and EPS increased to 14.9 million tons in 2010 from 13 million tons in 2000.³² While globally polystyrene markets showed a decline in demand over the past decade, GBI reports that global EPS demand grew at an annual rate of 5.5 percent during the period 2000-2010.³³ Even in the U.S. where EPS demand in the last decade declined modestly (less than 1 percent compounded annually) GBI expects a positive 2 percent annual growth rate in the next decade.³⁴ Globally, growth in China consumed more than half of the EPS demand in 2010, and China’s demand for EPS is expected to continue to increase annually at approximately 10 percent through 2020.³⁵ In addition, recent policies in China that enforce restrictions on the level of contamination allowed in imported waste materials favors operations in the U.S. that produce more highly processed recycled materials for export.³⁶

In its study of plastics recycling, the Freedonia Group reports that packaging will continue to be the leading market for recycled plastic in 2016, with the strongest gains expected for food and beverage bottles and clamshell containers, fueled by rising production of recycled resins that are suitable for food contact uses.³⁷ In addition, the study forecasts that collection of polystyrene for recycling and export will increase 6.5 percent per year to 155 million pounds in 2016.³⁸ In retrospect this estimate made in 2011

²⁷ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

²⁸ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

²⁹ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

³⁰ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

³¹ Mike Verespej, *Plastics Recycling Update*, February 2014, p. 16.

³² GBI Research, *Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020*, p. 1.

³³ GBI Research, *Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020*, p. 3.

³⁴ GBI Research, *Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020*, p. 312.

³⁵ GBI Research, *Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020*, pp. 26, 57.

³⁶ *Plastics News Reports, Plastic Recycling Market Review and Outlook 2014, North America- Post-Consumer & Post-Industrial*, pp. 5-7.

³⁷ Freedonia Group, *Recycled Plastics to 2016, Executive Summary*, p. 2.

³⁸ Freedonia Group, *Recycled Plastics to 2016*, and section entitled, *Recycled Polystyrene Collection & Markets* (1 of 2).

was conservative as it was prepared before a large increase in post-consumer EPS recycling was reported in 2013.³⁹

The Freedonia Group study estimates that domestic recycled polystyrene demand in the U.S. will increase 8.0 percent per year to 2016, driven by continued increases in the use of recycled content in polystyrene foam for protective packaging and loose-fill applications.⁴⁰ The report also anticipates more rapid gains in recycled polystyrene demand in smaller volume markets, such as containers, construction products, and niche consumer goods.⁴¹

³⁹ EPS Industry Alliance, 2013 EPS Recycling Rate Report, p. 2.

⁴⁰ Freedonia Group, Recycled Plastics to 2016, and section entitled, Recycled Polystyrene Collection & Markets (2 of 2).

⁴¹ Freedonia Group, Recycled Plastics to 2016, and section entitled, Recycled Polystyrene Collection & Markets (2 of 2).

Attachment A

Selected Associations & Directories

Associations	
Alabama Environmental Council	www.aeonline.org
American Chemistry Council	www.americanchemistry.com
American Chemistry Council's Plastics Foodservice Packaging Group	http://plastics.americanchemistry.com/Product-Groups-and-Stats/PFPG
Association of New Jersey Recyclers	www.anjr.com
Association of Postconsumer Plastic Recyclers	www.plasticrecycling.org
Building Materials Reuse Association	www.bmra.org
Canadian Plastics Industry Association	www.plastics.ca
Container Recycling Institute	www.container-recycling.org
EPS Industry Alliance	www.epsindustry.org
Global Alliance for Incinerator Alternatives	www.no-burn.org
Institute of Scrap Recycling Industries, Inc.	www.isri.org
National Waste & Recycling Association	www.wasterecycling.org
New York State Association for Reduction, Reuse, and Recycling	www.nysar3.org
Society of Plastics Engineers	www.4spe.org
SPI: The Plastics Industry Trade Association	www.plasticsindustry.org
Directories	
California Department of Resources Recycling and Recovery	www.calrecycle.ca.gov
Home for Foam	www.homeforfoam.com
Northeast Recycling Council	www.nerc.org
Ohio Recyclers and Environmental Service Providers	https://ebiz.epa.ohio.gov
Pennsylvania Department of Environmental Protection	www.depweb.state.pa.us
Plastics Recycling Marketplace	http://plasticrecyclingmarketplace.com
PlasticsMarkets	www.plasticsmarkets.org
Recycling Works Massachusetts	www.recyclingworksma.com
RecyclingMarkets.Net	www.recyclingmarkets.net
Resource Recycling	www.resource-recycling.com
Solid & Hazardous Waste Education Center	www4.uwm.edu
Southeast Recycling Development Council	www.serdc.org
The Plastics Exchange	www.theplasticsexchange.com

Attachment B

Selected End Users and Processors of Post-Consumer EPS

Type	Website	Location	Source
End User			
Alternative Rubber & Plastics Inc.	www.altrubber.com	NY	Northeast Recycling Council
American Wick Drain	www.americanwick.com	NC	BRG Research
Armstrong Brands Inc.	www.armstrongbrands.com	NY	Northeast Recycling Council
Commodore Plastics	www.commodoresolutions.com	NY	Society of Plastics Engineers
Dolco Packaging	http://dolco.tekni-plex.com	IN	BRG Research
Engineered Plastics LLC	www.engineeredplastics.com	PA	Northeast Recycling Council
Gary Plastic Packaging Corp.	www.plasticboxes.com	NY	Northeast Recycling Council
GP Harmon Recycling	www.gpharmon.com	NY	Northeast Recycling Council
Highwood USA LLC	www.highwood-usa.com	PA	BRG Research
Jacobs Plastics Inc. USA	www.jacobsplasticsonline.com	MI	Foodservice Packaging Institute
Kazz Molds	www.kazzmolds.com	CA	California Department of Resources Recycling and Recovery
Michigan Foam Products	www.michiganfoam.com	MI	Foodservice Packaging Institute
Nova Chemicals	www.novachem.com	PA	BRG Research
Pactiv	www.pactiv.com	IL	BRG Research
Picture Depot	www.picturedepot.ca	Canada	Foodservice Packaging Institute
Polyframe Moulding	www.polyframe.net	Canada	Foodservice Packaging Institute
Polystyrene Recycling Solutions		OH	BRG Research
Princeton Moulding Group LLC	www.aftexinc.com	NJ	BRG Research
RoBran Industries Inc.	www.robraninc.com	CT	Northeast Recycling Council
Royal Group	www.royalbox.com	GA	Foodservice Packaging Institute
Shelter Enterprises	www.shelter-ent.com	NY	Northeast Recycling Council
Styrolution America LLC	www.styrolution.com	IL	BRG Research
Styrorail	www.styrorail.ca	QC	Foodservice Packaging Institute
Suntex Plastics Corp.	www.reusemarketplace.org	FL	Northeast Recycling Council
Thermal Foams	www.thermalfams.com	NY	Northeast Recycling Council
TRC Foam	www.trcrecycle.com	FL	Foodservice Packaging Institute
Tristate Foam Products	www.tri-state-foam.com	VA	Foodservice Packaging Institute
Truefoam Inc.	www.truefoam.com	NS	Foodservice Packaging Institute
Weisenbach Recycled Products	www.recycleproducts.com	OH	Foodservice Packaging Institute
Both End Users and Processors			
Americas Styrenics	www.amstyrenics.com	TX	Foodservice Packaging Institute
Apex Recycling	www.apex-recycling.com	CA	BRG Research
Aqua-Pak Styro Containers Ltd.	www.aquapak.com	BC	Foodservice Packaging Institute
CellMark WasteStream Solutions	www.cellmarkwastestream.com	CT	Northeast Recycling Council
Cougles Recycling Inc.	www.couglesrecycling.com	PA	Northeast Recycling Council
CSI Plastics Inc.	www.csiplastics.com	MA	Northeast Recycling Council
Donco Recycling Solutions	www.doncosolutions.com	IL	Northeast Recycling Council
EPS Solutions	www.epssolutions.ca	Canada	Foodservice Packaging Institute
Fortune Plastic & Metal Inc.	www.fortunegroup.net	NY	Northeast Recycling Council
INTCO	www.intco.com.cn	China	BRG Research
MCS Industries Inc.	www.mcsframes.com	PA	BRG Research
Modern Corp.	www.moderncorporation.com	NY	Northeast Recycling Council
Myers Industries Inc. (Myers Lawn & Garden Supply)	www.myerslawnandgarden.com	OH	BRG Research
NEPCO	www.nepcomoulding.com	CA	Foodservice Packaging Institute
New Christie Ventures LLC	www.newchristieventures.com	CT	Northeast Recycling Council
Newark Recycled Fibers	www.newarkgroup.com	NJ	Northeast Recycling Council
Newman Paper Co.	www.newmanpaperboard.com	PA	Northeast Recycling Council
Plastic Recycling Inc.	www.plastic-recycling.net	IN	BRG Research
Polywin Corp.	www.polywin.net	CA	Northeast Recycling Council
RAPAC LP	www.ringcompanies.com	TN	BRG Research
Shuman Plastics Inc.	www.shuman-plastics.com	NY	Northeast Recycling Council
Styrochem (part of Wincup)	www.styrochem.com	QC	Foodservice Packaging Institute
Styrotek Inc.	www.styrotek.com	CA	Foodservice Packaging Institute
Temp Precision Molded Foam	www.tempo-foam.com	CA	Society of Plastics Engineers
Uniek Inc.	www.uniekinc.com	WI	BRG Research
Uniko Extrusions	www.unikoempire.wix.com/unikoextrusi	QC	Foodservice Packaging Institute
Vikoz Enterprises Inc.	www.vikoz.com	UT	Northeast Recycling Council
WR Grace	www.grace.com	MD	Foodservice Packaging Institute
Processors			
AAA Computer and Electronic Recycling Inc.		PA	Northeast Recycling Council
Aaron Industries Corp.	www.aaroninc.com	MA	Northeast Recycling Council
Accurate Recycling Corp.	www accuraterecycling.com	PA	Northeast Recycling Council
Adirondack Plastics & Recycling Inc.	www.plasticsworldwide.com	TX	Northeast Recycling Council
Ag Polymers	www.agpolymers.com	NY	Northeast Recycling Council
ALA Recycling Industries	www.alarecycling.com	MA	Northeast Recycling Council
American Recycling LLC	www.americanrecyclingca.com	CA	California Department of Resources Recycling and Recovery
Arrotin Plastic Materials Inc.	www.arrotin.com	CA	California Department of Resources Recycling and Recovery
Avangard Innovative	www.avaicg.com	TX	BRG Research
B. Schoenberg & Co. Inc.	www.bschoenberg.info	NY	Northeast Recycling Council
Barkley World Trade/International Recycling of America Ltd.		NY	Northeast Recycling Council
Cactus Recycling Inc.	www.cactusrecycling.com	CA	California Department of Resources Recycling and Recovery
Cal Micro Recycling	www.onestoprecycler.com	CA	California Department of Resources Recycling and Recovery

Cardinal Products Inc.	www.cardinalproductsinc.com	CA	California Department of Resources Recycling and Recovery
CE Consulting & Marketing Inc. (CECM Corp)		NY	Northeast Recycling Council
Connecticut Metal Industries	www.ctmetal.com	CT	Northeast Recycling Council
Cortland County Recycling Center	www.cortland-co.org	NY	Northeast Recycling Council
Cresset Powers Ltd.	www.cressetpowers.com	CA	California Department of Resources Recycling and Recovery
David's Plastic Trading Inc.	www.davidsplastic.com	NY	Northeast Recycling Council
Dubitec America Inc.	www.dubitecusa.com	CA	Northeast Recycling Council
E. J. Wright Inc.	www.ejwinc.com	CA	California Department of Resources Recycling and Recovery
FCR Ontario		NY	Northeast Recycling Council
Federal International Inc.	www.federalinternational.com	MO	Northeast Recycling Council
Fiber Conversion Inc.	www.fiberconversion.net	NY	Northeast Recycling Council
Filco Carting	www.filcocarting.com	NY	Northeast Recycling Council
Findlay Foam Recycling Inc.	www.ffrinc.com	OH	Northeast Recycling Council
Generated Materials Recovery (GMR)	www.generated.com	NY	Northeast Recycling Council
Gianco Environmental Services Inc.	www.gianco.com	NY	Northeast Recycling Council
GLR Recycling Solutions	www.glradvanced.com	NY	Northeast Recycling Council
Great Lakes Paper Fibres Corp.	www.greatlakespaper.com	NY	Northeast Recycling Council
Hudson Metal	www.hudsonmetals.com	NY	Northeast Recycling Council
Innovative Commodities		NY	Northeast Recycling Council
Island Recycling Solutions LLC		NY	Northeast Recycling Council
Joe's Plastic Inc.	www.800plastics.com	CA	California Department of Resources Recycling and Recovery
Jones-Carroll Inc.		NY	Northeast Recycling Council
K & B Plastics Industries Inc.		NY	Northeast Recycling Council
Kal-Trading Inc.	www.kaltrading.com	Canada	Northeast Recycling Council
Louis Monteleone Fibres Ltd.	www.lmfrecycling.com	NY	Northeast Recycling Council
Lynx Recyclers	www.lynxrecyclers.com	CA	California Department of Resources Recycling and Recovery
Marck Industries Inc.	www.marck.net	NY	Northeast Recycling Council
Materials Reclaim Industries		NJ	Northeast Recycling Council
Medway Plastics Corp.	www.medwayplastics.com	CA	California Department of Resources Recycling and Recovery
Merlin Plastics	www.merlinplastics.com	BC	Foodservice Packaging Institute
Ming's Recycling Corp.	www.mingsrecycling.com	CA	California Department of Resources Recycling and Recovery
Modern Dispersions Inc.	www.moderndispersions.com	MA	Society of Plastics Engineers
Monroe County Department of Environmental Services (MCDES)	www.monroecounty.gov	NY	Northeast Recycling Council
Montgomery-Otsego-Schoharie Solid Waste Management Authority	www.mosainfo.org	NY	Northeast Recycling Council
Nationwide Foam	www.nationwidefoam.com	MA	Northeast Recycling Council
Nationwide Recycle by Mail	www.nationwiderecyclebymail.com	MA	Northeast Recycling Council
Nationwide Scrap LLC	www.nationwidescrap.com	NY	Northeast Recycling Council
Nicos Polymers Group	www.nicospolymers.com	PA	Northeast Recycling Council
Ontario Recycling Inc./ORI Plastics of Rochester	www.ontariorecycling.com	NY	Northeast Recycling Council
Oswego Industries Inc.	www.oswegoindustriesinc.org	NY	Northeast Recycling Council
Plactory Inc.	www.ecoquality.com	CA	California Department of Resources Recycling and Recovery
Plastic Services Inc.	www.plasticservicesinc.com	NJ	Northeast Recycling Council
PlastiCycle Corp.	www.plasticycle.com	NY	Northeast Recycling Council
Poly Recovery LLC	www.polyrecovery.com	NH	Northeast Recycling Council
Polystyrene Recycle	www.polystyrenerecycleplus.com	QC	Foodservice Packaging Institute
Primo Plastics	www.primocorp.com	CA	California Department of Resources Recycling and Recovery
Recycling Electronics and Computer Technologies Inc. (REACT)	www.react-e-cycling.com	NY	Northeast Recycling Council
Re-Harvest Inc.	www.re-harvest.com	ME	Northeast Recycling Council
Reliable Industries	www.relbox.com	PA	Northeast Recycling Council
REPCO Services LLC	www.repcoservicesllc.com	FL	Northeast Recycling Council
Resource Recovery Co.	www.maximizersystems.com	CA	California Department of Resources Recycling and Recovery
RJM International Inc.	www.rjminternational.com	CA	California Department of Resources Recycling and Recovery
Robert Wright Disposal	www.robertwrightdisposal.com	NY	Northeast Recycling Council
Siwin Corp.	www.siwin.com	CA	California Department of Resources Recycling and Recovery
Sterling Recycling Inc.	www.sterlingrecycling.com	NY	Northeast Recycling Council
Styro Recycle LLC	www.styrorecycle.com	WA	Foodservice Packaging Institute
Super Link Plastics	www.superlinkusa.com	CA	California Department of Resources Recycling and Recovery
Switchable Solutions	www.switchablesolutions.com	Canada	Foodservice Packaging Institute
TAM Inc.	www.tamwasteremoval.com	VT	Northeast Recycling Council
The Sutta Co.	www.sutta.com	CA	California Department of Resources Recycling and Recovery
Total Petrochemicals	www.totalpetrochemicalsusa.com	TX	BRG Research
Tropical Media Services		CA	California Department of Resources Recycling and Recovery
Universal Commodity Services Inc.	www.ucsincny.com	NY	Northeast Recycling Council
Valcore Recycling	www.valcorerecycling.org	CA	California Department of Resources Recycling and Recovery
Verdeco Plastics Inc.	www.verdecoplastics.com	IL	Foodservice Packaging Institute
Wellmark Recycling	www.wellmarkrecycling.com	NC	Society of Plastics Engineers
Willimantic Waste Paper Co. Inc.	www.williwaste.com	CT	Northeast Recycling Council

Note: A processor, or recycler, is an entity that processes plastics to add further value, typically by separating, removing contaminants, reducing in size (creating pellets or flakes) and washing the plastics. A processor typically sells their product to an end user. An end user is an entity that buys mixed and/or sorted plastic or processed feedstock from a generator and/or a MRF, and/or a processor and uses the material to make new products.