



Pennsylvania

Recycling Markets Center

5 YEAR
PERFORMANCE
REPORT



5 YEAR PERFORMANCE REPORT



Robert Bylone
Executive Director, President

Message from the Executive Director

In this inaugural performance report, the RMC highlights many of our accomplishments while we strive for sustainable operations. We thank our Board of Directors; funders, especially the Pennsylvania Department of Environmental Protection and Center of Excellence Business Partners; our founding organization, The Pennsylvania State University, specifically Penn State Harrisburg; and many partnering organizations.

Most importantly, I thank the individuals that comprise the RMC team. Without valued staff, our combined effort to grow capacity in the Pennsylvania recycled materials economy could not be affected.

As we reflect over the past five years of operations, it is important to recognize how far recycling has come in Pennsylvania, despite a challenging economy and volatile materials markets. Looking back at the significant impact we had on so many organizations, existing and new, in all regions of the Commonwealth, the RMC is proud of our contribution in the expansion and support of the Pennsylvania environmental climate for demand-side recovery of recyclable resources.

The RMC continues to build upon our programming so that we facilitate new successes – growing Pennsylvania’s recycled materials economy. After all, **“Recycling Means Business.”**



The Emergence of the Recycling Markets Center

The Pennsylvania Recycling Markets Center, Inc. (RMC) was designed to encourage the continued growth and economic health of the Commonwealth's recycling and reuse industries. Created by the PA Department of Environmental Protection (DEP) at the Department's public request, existence of the RMC and its functions directly support the markets development requirements of the recycling program plan that was legislatively required. Act 175 of 2002 amends Act 101 of 1988, "The Municipal Waste Planning, Recycling, and Waste Reduction Act."

The RMC is the only entity in Pennsylvania dedicated to supporting and facilitating end-use stimulation of the recycled materials we collect in the Commonwealth. The services provided by the RMC are primarily to the demand side of the recycling industry.

On October 18, 2004 a competitive grant was awarded to Penn State Harrisburg for the creation and establishment of the Recycling Markets Center in Middletown, PA. With the appointment of an Executive Director, RMC operations began in July 2005.

Pictured from left to right, the RMC staff:

Wayne Bowen, Recycling Program Manager

Kirsten Deysher, Business & Outreach Liaison

Jack Himes, Senior Recycling Program Manager

Melanie Morrison, Recycling Markets Administrative Assistant

Robert Bylone, Executive Director, President

Pete Previte, Recycling Markets Development Manager



About the PA Recycling Markets Center

The RMC is an independent 501(c)3 Non-Profit Pennsylvania Corporation, governed by its own board of directors, and supported by an Executive Director and other professional staff. With inclusion of ex-officio board directorates, there are 24 states represented through the RMC board, offering broad industry feedback from RMC to the community. The mission of the Recycling Markets Center is to expand and develop more secure and robust markets for recovered secondary materials, stimulate demand for products with recycled content, and research and maintain up-to-date market trend data. The RMC is the lead organization to develop recycling markets in Pennsylvania, working with environmental, technical assistance, and economic development organizations to support generators, haulers, processors, manufacturers and end-users of recycled materials and products.

CORE Strengths



- » Business Growth Services
- » Product Development & Recycled Product Marketing Research
- » Recycled Content Product Improvement
- » Materials Supply Chain Management
- » Recycled Content Product or Process Certification Assistance
- » Equipment & Technology Evaluations
- » Recycling Business Forums & Programs

The RMC Core Strengths are part of 5 key program areas.

These program areas highlight RMC activity.

- 1 Economic Development** – The RMC works with manufacturing facilities in the Commonwealth that utilize recycled commodities for feedstock conversion into a new product. The RMC also provides assistance with the start-up of new processes. In Market Development, RMC involvement with Commonwealth and national standardization committees continues to generate influence that is preferable to the use of recycled content products produced in Pennsylvania.
- 2 Accelerated Commercialization** – The RMC provides assistance to product designers and process designers to accelerate time-to-market of new products and processes that utilize recycled commodities. This ultimately leads to acceleration of return on investment while creating a competitive edge for Pennsylvania businesses.
- 3 Workforce Development** – RMC programming delivers vocational and occupational “hands-on” training that directly impacts efficient end use of recycled commodities.
- 4 Technical Assistance** – RMC supplies point-of-service based, limited pre-emergence, or existing business consultative assistance, which is often executed with private service providers or other non-profit partners.
- 5 Recycling Markets Intelligence & Outreach Portal** – RMC strives to enhance market communications and examine effective methods for acquisition and dissemination of recycling markets, markets development, and materials end-use strategies.

RMC Featured Successes & Programs



AN RMC SUCCESS STORY: RELATIONSHIP DEVELOPMENT

As a result of a Plastics Forum, the RMC successfully paired at least 6 Pennsylvania businesses that were not previously engaged with one another. A business that manufactures recycling depositories, Windsor Barrel Works, was sending its plastic lumber trimmings out of state. At the RMC Forum, Windsor Barrel Works was successfully paired with a Pennsylvania business in Lancaster County. The trimmings were then re-manufactured into Pennsylvania produced, recycled content plastic products.



AN RMC SUCCESS STORY: SUCCESSFUL WASTE DIVERSION

Roaring Spring Paper Products partnered with Concord Plastics and the Recycling Markets Center to create waste diversion efforts that resulted in a 95% reduction in their waste stream. They were able to achieve cost avoidance for 150,000 tons of trash disposal per month and in turn are now paid for that material.

"The RMC was instrumental in guiding us toward a successful Pharmacy Stock Bottle Recycling program by providing logistical support along with helping us locate a recycler and overcome any obstacles," said Rose Bruce, Supervisor Support Services, GIANT Food Stores

The Program diverts #1 and #2 plastic pharmacy stock bottles from more than 100 of their in-store pharmacies. In the first 224 days of operation, 7.8 tons of plastic was diverted. The material is being processed and marketed by Chambersburg Waste Paper Company in Chambersburg, PA.



EXPOSITION

The RMC organized and held the PA REMADE Exposition, the first-of-its-kind in Pennsylvania. (REMADE is an abbreviation for REcycling MARKets DEvelopment) This exposition was a business-to-business exhibit of Pennsylvania produced, recycled content products, held at the Whitaker Center, Harrisburg, PA. Results for the first event include:

- 130 attendees
- 24 exhibitors

Roaring Spring Premium Spring Water has had similar success with waste diversion, also finding a recycling partner in Concord Plastics. A sister company of the Paper Products Division, they have managed to divert 80% of their waste stream and are experiencing the same economic benefits. General Manager Scott Hoover said "businesses that are not implementing waste diversion are losing money".

Estimated measurable results of the project include:

- 3,300 tons of material diverted annually, equal to nearly the weight of the Giant Center in Hershey, PA
- \$60,000 value received for the material
- \$175,000 cost avoided to dispose the material if not recycled
- Annual global climate change air emissions reduction – 100 tons of Carbon Dioxide

RMC Featured Successes & Programs



Glass

Since October 2005, through RMC on-lot septic recycled glass sand programming and RMC's joint translational research efforts with researchers on use of glass as a concrete additive, Cogle's Recycling in Hamburg, PA has been able to distribute all of their previously unsellable color mixed, recycled glass. Through this market development, Cogle's Recycling has become a glass neutral facility and has sold all of its in process, color mixed glass materials, approximately 60,000 tons of glass. At present, there are extended orders for recycled glass for these uses.

"With the expert help and guidance of the RMC we were able to market triple-mix recycled glass that was previously viewed as trash and turn it into a marketable commodity with a strong demand and growing future interest."

Matthew Cogle, COO, Cogle's Recycling Inc.

Since October 2006, the RMC has delivered a program on use of crushed, recycled glass as a manufactured on-lot septic filter sand.

Results include:

- The program has been delivered 17 times at various locations throughout Pennsylvania. In combined presentation to over 1000 Sewage Enforcement Officers, construction contractors, recycling professionals, realtors, and engineers.
- This program has been reported to increase recycled glass sand sales in eastern Pennsylvania more than doubling sales each year since inception of the program in October 2006.
- The RMC developed the "Glass Sand Mound Construction and Markets Development" DVD included in this program.
- RMC team members designed and oversaw construction of the largest, recycled glass filled on-lot septic system in the state, which contains approximately 1,800 tons of manufactured glass sand. 1,800 tons is equivalent in weight to 4.5 Boeing 747 planes.
- RMC programming in the use of manufactured recycled glass sand resulted in many requests from northeast Pennsylvania builders to Lackawanna County Materials Recovery Facility (MRF). As a result, the Lackawanna County MRF reopened their manufacture of recycled glass sand as on-lot septic filter sand to required specifications. It has been reported this recycled glass sand has been used as far away as Monroe County.

A truck unloads crushed, recycled glass for use in a commercial on-lot septic system at Grace Bible Church of Hawk Mountain.





EPEAT

Through RMC programming on EPEAT (Electronic Product Environmental Assessment Tool), RMC successfully encouraged EPEAT procurement guidelines to be added to the 2008 – 2009 Penn State University and Commonwealth Department of General Services Contracts, resulting in purchase of approximately 73,000 EPEAT-rated computers in FY 08-09. This did not increase the cost of the computers to the purchaser and it is estimated that it saved the following disposal concerns for disposal facilities:

- Reduced energy use by 84 million kilowatt-hours; approximately equal to the electricity needed to annually power 7,070 households;
- Reduced greenhouse gas emissions approximately equal to removing 4,970 passenger cars from the road annually;
- Reduced municipal solid wastes approximately equal to the waste generated annually by 1,260 households;
- Reduced hazardous waste generation by 1,311 tons;
- Reduced toxic materials, including lead and mercury, by 13 tons.

Compostable Organics

The RMC works with many businesses and municipalities to establish individual programs to increase the diversion of organic wastes from the waste stream. The RMC staff is experienced in feedstock sourcing; permit identification and completion guidance; and research of funding opportunities.



MARKETS DEVELOPMENT FORUMS

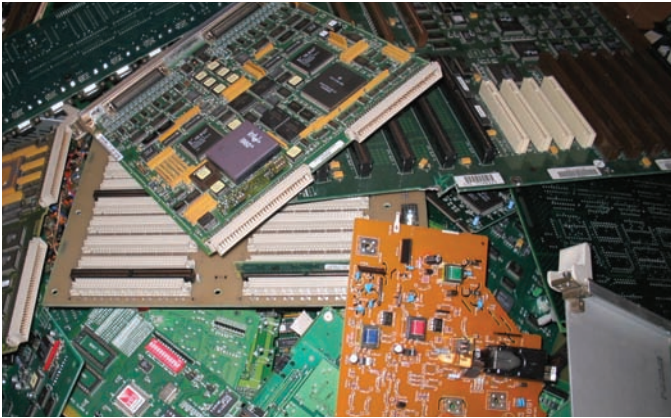
The RMC has led 9 Industry Markets Development Forums as follows:

- Glass Recycling & Markets
- Organics, Compost, & Manufactured Soils Markets
- On-Farm Composting Market Opportunities
- Agricultural & Film Plastics Markets
- Electronics Scrap Markets & Policy
- Tire & Rubber Scrap Markets
- Carbon Credit Trading & Carbon Reduction for Recycled Materials
- Commonwealth Disposal Ban Policy Opportunities
- Rigid Plastics Recycling & Markets Options

RMC Markets Development Forums are coordinated with strategic outreach to industry leaders, bridging the supply chain while identifying barriers and opportunities in the utilization of secondary commodities generated in Pennsylvania.

The RMC has also held numerous other forums to introduce markets development opportunities to the business community. As an example of this outreach, the RMC conducted a forum for the PA Food Merchants Association Members titled “Food Waste Composting in Grocery Operation”. The RMC held training for small business centers state-wide to provide information on recycling industries and related materials markets trends.

RMC Featured Successes & Programs



PERMITTING

The RMC successfully assisted 5 Pennsylvania businesses in obtaining an electronics recycling general permit.

One business, PC Parts, Inc., projects the permit will average an annual business increase of \$0.5 Million dollars per annum. As a result of obtaining the permit, three new employees have been added at PC Parts, Inc.



AN RMC SUCCESS STORY: LVH INDUSTRIES OPENS FOR BUSINESS

The RMC assisted in several aspects of start-up for LVH Industries, Inc., a new Eastern PA manufacturer of recycled glass products (www.lvhindustriesinc.com). Current products include expendable blasting abrasives, fiberglass fiber feedstock, industrial cullet for fiber glass insulation, decorative countertop glass, and water filtration media.

“Our competitive advantage was fast tracked through assistance we gained from RMC,” Adam Crockett, Vice-President of Sales for PC Parts, Inc.

PC Parts, Inc. is a Central Pennsylvania based business that refurbishes and remanufactures computer and printer parts. The RMC streamlined coordination of the necessary activities for PC Parts, Inc. to acquire an electronics recycling General Permit from the PA Department of Environmental Protection.



ATTRACTING NEW BUSINESS

Although a dynamically changing, estimated figure, the RMC estimates it has facilitated at least \$21M of capital investment or sales growth in recycled materials markets since inception of operations, July 2005 – January 2011. During this same period the RMC has tracked investment in PA recycling markets in excess of \$66M. This figure does not include avoided cost of disposal for the materials recycled.

GREENING GENERATION

RMC's location at Penn State Harrisburg and tether to the Pennsylvania State University not only gives us access to the research capabilities of a large university and faculty partnerships, but also allows us to assist with on-campus activities and mentoring opportunities. Our staff has been engaged in a number of master thesis and master project committee reviews regarding recycling in Pennsylvania. The RMC team has served as a reader for four master's papers. The RMC has also employed 12 students on a part-time basis since operations began in 2005.



THE RMC GOES EXTREME

The RMC was selected to provide technical support to the design team for the nationally televised show, “Extreme Makeover: Home Edition.” This home was built in Berks County, Pennsylvania for a deserving family.

Over 20 PA manufactured, recycled content products were used in the construction of the ‘Extreme’ home in Berks County.

The RMC coordinated diversion of approximately 99.0 tons of waste and debris from the project, equal to the weight of one Boeing 747 aircraft.

As coordinated by RMC, approximately 92% of the build debris was not disposed and was reused, recycled, or used for energy generation.

The show producers hailed this project as the most organized in 173 builds. The RMC’s efforts not only diverted waste, but also ensured that the site was clean at all times.

RMC Team Highlight



An RMC team member and Senior Program Manager, Jack Himes, PE, is an expert specialist in electronics asset design, management, and recycling. Jack has over 30 years of combined experience in this area. He also serves on the national advisory

committee for the State Electronics Challenge, a voluntary challenge program to encourage government and non-government entities to reduce their environmental footprint attributable to computer equipment.



AN RMC SUCCESS STORY: KUUSAKOSKI COMES TO PENNSYLVANIA

The RMC facilitated attraction and organizational start-up of a new company to Pennsylvania, Kuusakoski Philadelphia, LLC. Kuusakoski will be recycling electronics scrap, reducing the electronics into the primary metals that are used to manufacture the electronics. Kuusakoski Oy (www.kuusakoski.com) is internationally headquartered in Finland. The cutting-edge Kuusakoski processing technology is the first of its kind introduced to the United States, which is presently safely operated at locations in Finland, Sweden, and Russia.

“...Kuusakoski has proudly partnered with BGA Commodities and the Recycling Markets Center to make this project a reality.”

Richard Burgess, CEO & Managing Partner, Kuusakoski Philadelphia, LLC

The Pennsylvania Recycling Markets Center provided management support through all phases of the economic development project including business planning; loan, grant, and tax credit coordination; facilitation of opportunities with the Departments of Environmental Protection and Community and Economic Development; introduction to the Governor’s Action Team; introduction to the Philadelphia Industrial Development Authority; introduction to the Center for International Regulatory Assistance; and technology and process validation.

This \$10 Million capital investment into the Pennsylvania Economy also brings 30 new skilled, technical jobs to Philadelphia. At full capacity the facility intends to recover 60,000 tons of electronics per year.

This is equal to the weight of 267 Statues of Liberty each year!

CENTER OF EXCELLENCE

The Recycled Materials & Markets Center of Excellence, organized by the RMC, is a program that focuses on applied technological assistance, with a concentration in innovative markets development for recycled materials. Its goal is to inspire and nourish ideas that have commercial benefit.

“Becoming an RMC partner was a logical next step for us. As we continue to grow our company and expand our sustainability program, finding new markets for our recyclable waste will be increasingly important. Ultimately, we want our program to benefit the environment while having a positive impact on our bottom line.”

Kevin Small, Vice President, Construction & Development Weis Markets

This is an exclusive network of sustainability minded businesses including:

- Manufacturers of Recycled Content Products including Organic Recovery Facilities
- Organizations & Businesses with Sustainability Objectives
- Materials Processors
- Companies that provide goods or services to Recycled Materials Processors or Recycled Content Product Manufacturers
- Companies that are engaged in the distribution or resale of recycled content manufactured products

Participants gain insight of industry forefronts; featured advertising in RMC publications and on parm.org; access to the university, public assistance, and private network enterprises; RMC's product development and commercialization assistance programs; leads to product sales, feedstocks, and other business opportunities.

BY THE
NUMBERS,
RMC YIELDS
BIG
RESULTS

Since technical and business assistance operations of the RMC began in October 2005, the RMC has provided research information, technical manufacturing assistance, markets outreach, waste reduction, or business assistance in approximately:

- 680 Pennsylvania based organizations and companies;
- With these organizations and companies in 79% of Pennsylvania Counties, 53 of 67 Counties.

Of funds expended by the RMC through and including October 31, 2010, the return on investment to the department is estimated at approximately \$6.70 for every \$1.00 spent by RMC.



Pennsylvania

Recycling Markets Center

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