

# BACK TO BASICS

The plastics recycling industry has recovered from one of the most intense economic crises in a generation, but just how did they pull it off and where do they go from here? *Plastics Recycling Update's* annual survey of processors has the answer. by Henry Leineweber

When *Plastics Recycling Update* checked in with processors in 2011, the mood was undeniable. Plastics recycling firms were down, depressed and generally struggling to recover from the recession and continued economic downturn. Persistent material problems, tighter budgets and difficult operating conditions ruled the day, even as the trend of year-over-year decline largely halted.

What a difference a year makes. Today, the plastics recycling industry has recovered from the worst of the recession and is growing again. Now characterized primarily by high levels of competition between firms, increased collection volumes and new capital investments, the plastics recycling industry today faces an entirely new set of challenges.

*Plastics Recycling Update's* annual survey of plastic processors, now in its sixth year, polls executive-level professionals at U.S. plastics recycling facilities. Their responses offer unique insight into the direction of the industry.

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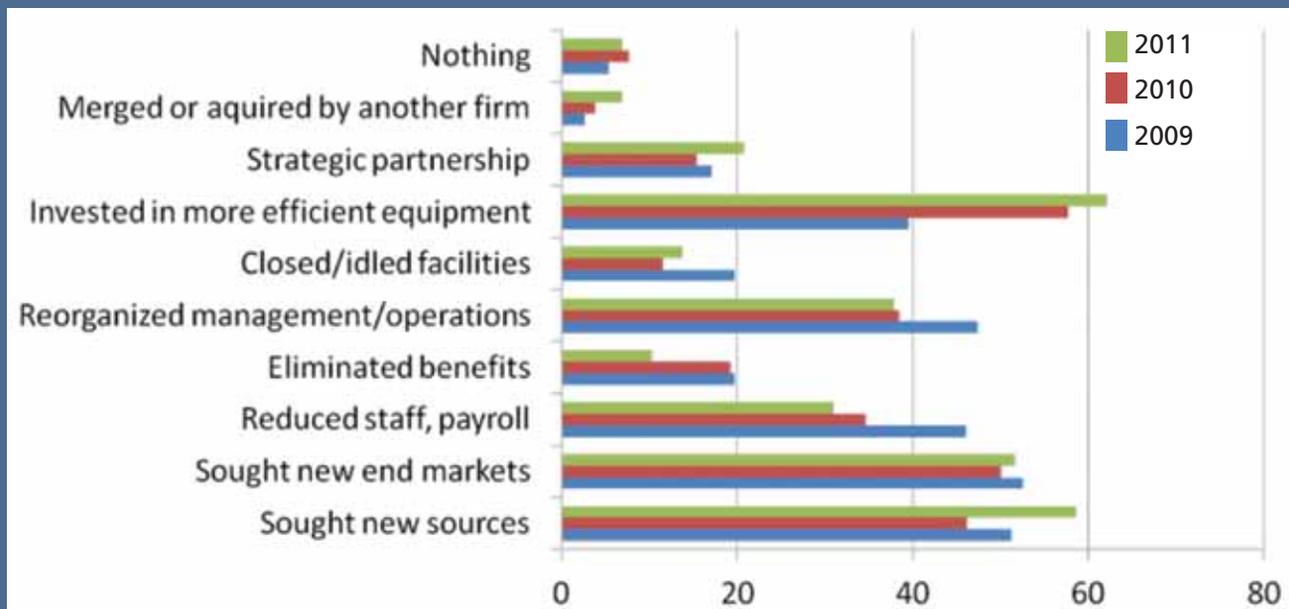
## Making adjustments

There has been a noticeable shift in the adjustments processors are making in running their businesses. Two years ago, nearly 50 percent of processors said they were in the process of cutting staff and reducing payroll expenses. Today, fewer than 30 percent say they are doing so. Similarly, just under 20 percent of firms reported they would be reducing benefits and compensation packages in 2009, compared to 10 percent in 2011. In the past year, 91 percent of firms said the number of employees increased or stayed the same.

Firms averaged 62 employees each, although there was a fairly even split between firm sizes. 40 percent of processors had fewer than 25 employees, 26 percent of processors had between 26 and 100 employees and 34 percent of processors had over 100 employees.

With personnel overhead and expenses down, firms are now looking to improve efficiency elsewhere. The big trend in 2011 was a renewed investment in new processing equipment by firms. Over 60 percent of plastics recycling companies said they were making new equipment investments in 2011, compared to just 39 percent in 2009. Additionally, processors are seeking out new sources of material necessary to keep these machines running efficiently.

**Figure 1 | Adjustments firms have made following the recession, in percent**



Source: *Plastics Recycling Update*, 2012

In fact, 65 percent of processors surveyed said the volume of material entering their facility increased in 2011. On average, reclaimers processed an average of nearly 19,000 tons in 2011, up from 17,700 tons in 2010 and just under 16,500 tons in 2009. Average capacity utilization fell approximately 4 percent in 2011 versus the previous year, but much of this was attributed to new equipment and processing capacity upgrades coming online.

In addition to new sorting systems and washing, grinding or extrusion upgrades, a third of processors reported investing in technology to sort and process plastics with unique additives.

## Sourcing, competition and shortages

Overall, market attitudes improved in 2011. Approximately 40 percent of all processors reported higher operating margins in 2011 – versus just 27 percent who reported worse margins. However, comparing the responses of firms handling PET, HDPE and Nos. 3-7 plastics yields some surprising results.

While 37 percent of PET processors said securing bales was harder in 2011 (versus 30 percent in 2010), and 36 percent of HDPE processors had a harder time securing bales (versus 20 percent in 2010), only 14 percent of 3-7 reported this

problem. Additionally, 50 percent of PET processors and 41 percent of HDPE processors reported year-over-year declines in bale quality, compared to just 25 percent of 3-7 processors.

These figures, and comments left by survey respondents, paint a picture of tightening competition for material. Demand for PET and HDPE feedstocks have outstripped increases in collection, driving up prices and shortening supplies. This has also resulted in reduced overall quality of material entering processing facilities. Where bale yields for 3-7 plastics were approximately 95 percent, PET yield-per-bale was only 73 percent, and HDPE yield, while increasing slightly versus last year, was 80 percent.

In terms of sourcing, most plastic processed by U.S. firms is bought and sold domestically. Of all scrap plastics entering a recycling facility, 83 percent are sourced from inside the United States, with an additional 13 percent coming from Canadian or Mexican sources. After processing, 76 percent of plastics are sold downstream in the United States and 12 percent are sold into Canada or Mexico. Approximately 8 percent go to the Chinese and East Asian market.

## End-uses

One of the recurring questions asked of pro-

cessors over the past several years has related to end-use markets for material.

When asked to rate which end-uses they were most optimistic about, PET processors rated food and beverage applications, film and sheet, and non-food packaging as their top choices in 2009. By 2011, however, that optimism has been almost completely erased. Reductions in the outlook for those end-uses, plus a renewed focus on fiber, strapping and engineered resins, have yielded a parity in the perceived outlook for these end-use markets.

The range of HDPE end-use applications are also near parity. Pipe, bottles and containers, and pails and buckets were the top three end-use markets HDPE processors were most optimistic about as recently as 2010. However, an across the board decline in anticipated end-use market applications has brought these applications more in line with the outlook for film and sheet, lawn and garden products, and lumber and extruded shapes.

There are several reasons for this emerging parity in the outlook for potential end-use applications. Most significantly are the aforementioned increased competition for material and overall reduction in bale quality. These two factors, coupled with an increase in the variety of types of plastic collected through single-stream curbside programs, have forced processors to explore

a variety of end-use applications, based on the composition of their incoming stream of materials.

As an aside, processors are genuinely split on whether single-stream collection helps or hurts plastic recycling. A third of respondents believe single-stream helps recycling, less than 30 percent say it has no impact, and 39 percent say it hurts recycling.

Another nascent end-use application identified in the survey is plastics-to-oil conversion technology, which chemically converts unrecyclable scrap plastics into crude oil. While no firms that participated in the survey currently employ this technology, 64 percent of processors said they were supportive of the technology as a way to manage “waste” plastic, and 38 percent said they may use the technology at some point in the future.

## Market development and moving forward

With business picking up, where does plastics recycling go next? By a wide margin (two thirds) of processors believe trade organizations, processors and the broader plastics recycling industry needs to focus on new market development in the near term. Improved consumer education and collection of plastics for recycling also ranked highly, which is understandable given the quality and supply constraints that have recently developed.

Extended producer responsibility, which shifts the responsibility for collecting end-of-life materials to manufacturers and retailers, is also seen as a potential area of focus, although it has yet to gain serious traction when up against these more immediate priorities.

Many processors believe efforts to further develop recycling markets – both

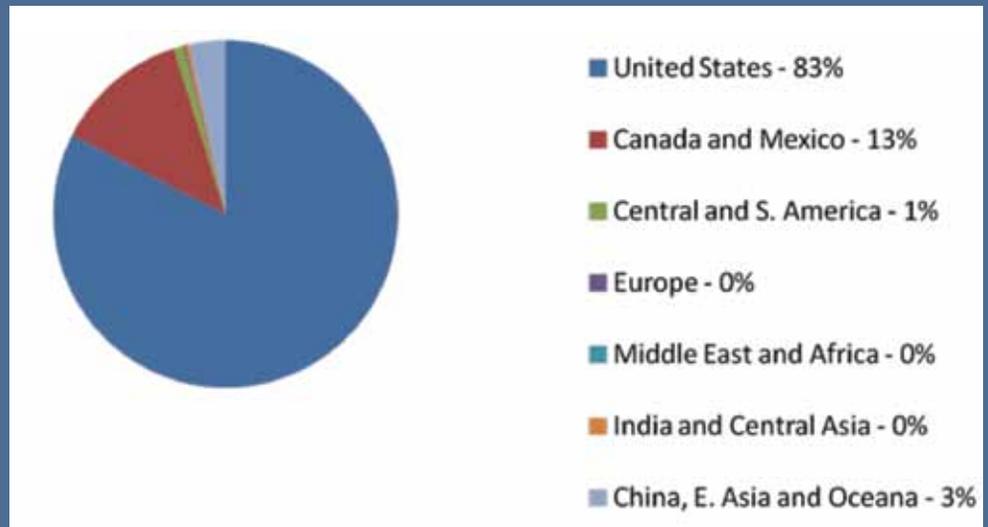
through improvements and consistency of collection streams as well as a diversified portfolio of end-uses and end-users – will help insulate recycled plastic prices from severe price fluctuations or collapses, such as the one in 2008. Wider adoption of the use of recycled content, many argue, will help stabilize prices, while at the same time, boosting demand.

Despite an urgency for new markets and material sources, the overall outlook of

plastic processors is positive. As a whole, the industry has bounced back from the recession and the challenges it faces today relate to growth, rather than contraction. **PRU**

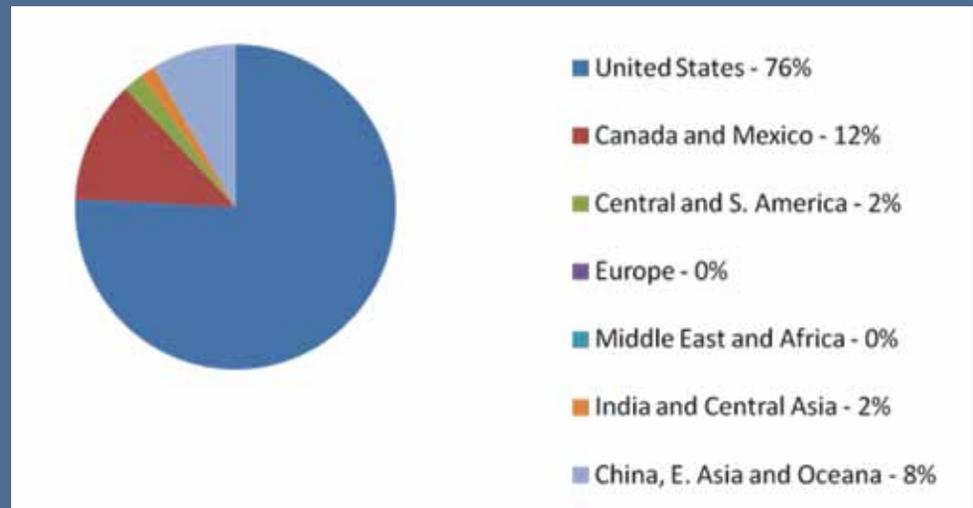
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## Figure 2 | Location of scrap suppliers



Source: *Plastics Recycling Update*, 2012

## Figure 3 | Location of scrap buyers



Source: *Plastics Recycling Update*, 2012