

# **2007 National Post-Consumer Recycled Plastic Bag & Film Report**

## **Introduction**

The 2007 National Post-Consumer Recycled Plastic Bag and Film Report is the third annual U.S. report on pounds of plastic bags and film recovered for recycling. (Generally in this report plastic bags and film will be referred to as “film”.) Research for this report was conducted by Moore Recycling Associates, Inc. of Sonoma, CA for the Plastics Division of the American Chemistry Council (ACC) of Arlington, VA.

## **Executive Summary**

In order to determine an accurate estimation of pounds of film recovered in 2007, both the domestic and export post-consumer film markets were surveyed. Recovery grew to an estimated 830,180,000 pounds of post-consumer film (including plastic bags) in 2007. Thus, the upward trend of plastic film recovery continues, resulting in an overall increase of 27 percent since 2005.

The information obtained is based on recovery data from 18 domestic processors or end-users of film material and 45 companies that export to overseas markets.

Despite weakness in homebuilding and remodeling, the domestic composite lumber industry remains a significant force in the market for scrap plastic film. Exports of plastic film, however, rose significantly in 2007, moderating weakness in the composite lumber market. Another notable shift was an increase in the amount of post-consumer film going into new film and sheet markets – approximately 6 percent more material went into new film and sheet applications. More manufacturers are using post-consumer resin.

Suppliers experienced steady prices for recovered film in 2007. Exporters frequently outbid domestic buyers resulting in less material purchased by domestic processors. Some domestic processors focused on acquiring new supplies through the development of additional collection programs. Because of high prices through the year, many established processors utilized their existing inventory in 2007. More consumers and businesses became aware of the opportunity to recycle plastic film through the increased visibility of plastic bag recycling and strong demand. The result: more material was recovered in 2007 than 2006.

With the shift in material toward the export market rather than domestic, and the challenge of collecting survey data from export buyers, the total reported collection for 2007 is likely conservative. This is especially true since the number of collection programs grew dramatically, with an increased number of retailers offering plastic bag recycling to consumers.

## **Findings**

In 2007, of the estimated 830,180,000 pounds of post-consumer film collected for recycling, the breakdown between the amounts consumed domestically and exported are as follows:

**Post-consumer Recovered Film**

<b>Year</b>	<b>Total</b>	<b>Exported</b>	<b>Consumed in US or Canada</b>
<b>2007</b>	<b>830,180,000</b>	<b>462,611,000</b>	<b>367,569,000</b>
<b>2006</b>	<b>812,010,000</b>	<b>221,082,000</b>	<b>590,928,000</b>
<b>2005</b>	<b>652,477,000</b>	<b>183,701,000</b>	<b>468,776,000</b>

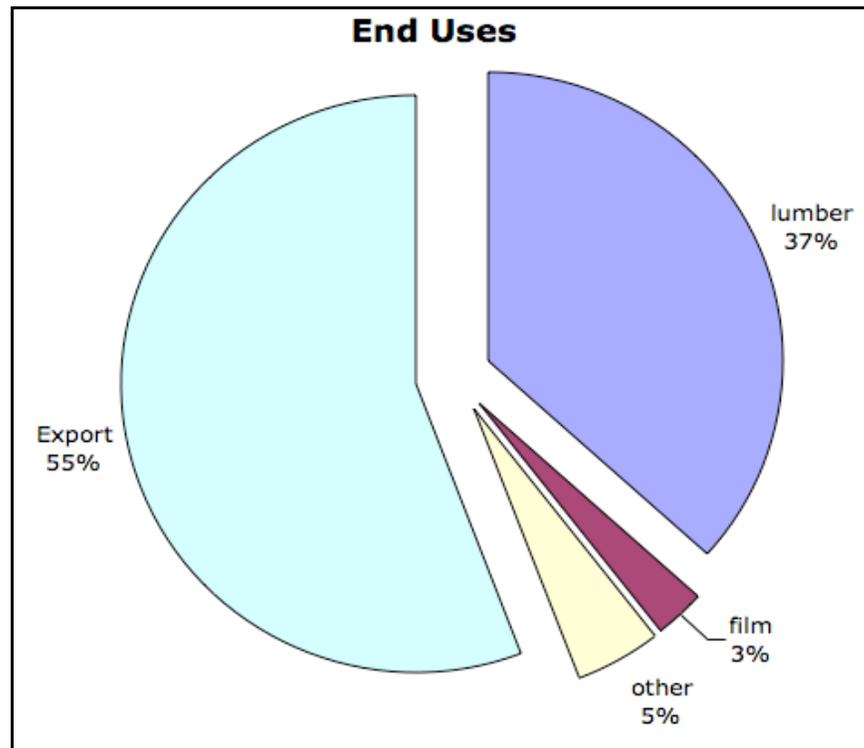
More than twice as much material was exported in 2007 compared to 2006. The export market frequently outbid domestic purchasers for clean material. China’s strong economy and the growing middle class increased demand for finished goods. High virgin prices made the use of recycled plastic more profitable and led to an increased number of small and medium sized processors handling film in China.

In addition to an increase in material purchased by exporters who were surveyed in 2006, there were more exporters added to the 2007 survey contact list.

Total domestic processing capacity is approaching 800 million pounds. Considering the use of existing inventory, utilization was higher than the amount purchased by U.S. and Canadian processors in 2007, but still well below total capacity. Utilization of film recycling capacity in 2007 was approximately 60 percent.

**End Use Markets**

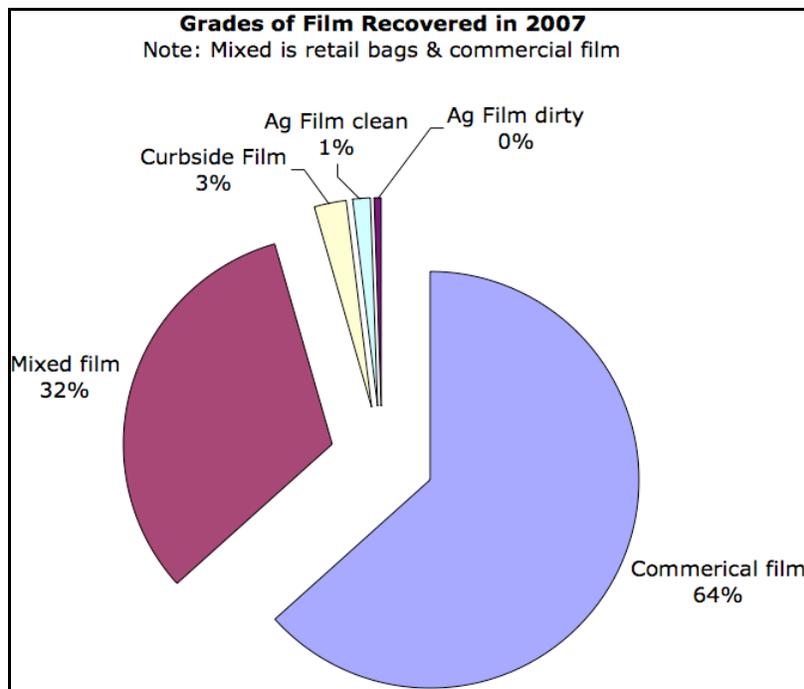
As previously noted, composite lumber applications were the primary use by the domestic end markets (37 percent). The export market purchased the largest share of U.S. recycled film (55 percent), while the domestic film markets utilized a growing amount (3 percent). A small percentage (5 percent) went into “Other” miscellaneous applications, such as pallets and buoys.



## Grades of Recovered Film

Plastic grocery and retail bags make up approximately 15 percent of the total post-consumer film recovered in 2007. Stretch film represents approximately 84 percent of post-consumer recovered film while agricultural film represents a small amount at approximately 1 percent. Plastic bags are often commingled with stretch film wrap for efficient collection at retail locations. Processors estimate bags make up 40 percent of the commingled bales purchased from retail programs. Curbside film is composed primarily of plastic bags.

Recovered film enters the market in various grades and typically includes a combination of baled HDPE, LDPE, and LLDPE.



**Commercial Film** = Clear, clean PE film including stretch wrap and poly bags

**Mixed Film** = Mixed color, clean PE film including grocery bags

**Curbside Film** = Mixed PE film generated at a MRF

**Ag Film** = PE film from over wintering & greenhouse film

The following chart on [www.PlasticBagRecycling.org](http://www.PlasticBagRecycling.org) provides examples of the increasing types of plastic bags and wraps that can be recycled with other types of film plastics from retail locations, such as stretch film (pallet wrap):



**Please recycle only clean, dry plastic bags and film. Remove receipts or any other items from bags.**

- newspaper bags
- dry cleaning bags
- bread bags
- produce bags
- toilet paper, napkin, and paper towel wraps
- furniture wrap
- electronic wrap
- plastic retail bags (hard plastic and string handles removed)
- grocery bag
- zip lock bags (remove hard components)
- cereal box liners
- diaper wrap (packaging)
- plastic shipping envelopes (remove labels)
- case wrap (e.g., snacks, water bottles)
- All clean, dry bags labeled #2 or #4.



**Look for clearly marked bins at participating grocery and retail stores**

## **Film Marketplace**

The construction industry (e.g., lumber, pipe) consumes a large percentage of recovered plastic. The ailing housing and construction market created a price crunch for many domestic processors in 2007. Bale prices were very high while demand for end products in the construction industry started to wane.

Beyond construction products, post-consumer film moved into a growing number of film and sheet applications in 2007. Values for virgin resin were high, which made post-consumer resin an attractive alternative. Values for scrap plastic were strong but not quite at their peak in 2007; however, they remained remarkably steady. Market fluctuations hovered within a penny per pound for most grades of film.

During the period of high scrap prices, paid mostly by the export market, quality declined, which affected domestic processors' ability to handle the increasing supply of plastic film. Suppliers baled film with higher levels of contaminants because exporters were more tolerant than domestic buyers. Decline in bale quality may have inhibited potential investment by manufacturers that are interested in alternative feed stocks. A steady supply of consistent quality material will attract end users.

### **Curbside Film**

Curbside film moved relatively well in 2007 and into 2008. Export buyers were open for business to purchase material to feed the growth of the increasing number of small and medium processors. Of the top 100 largest cities, eight had plastic bag curbside collection programs. Most of these programs are located in the Western United States with the majority in California. Approximately 21,000,000 pounds of curbside collected film was reported for 2007, but the total is likely much higher. In 2007, most West Coast MRFs pulled curbside-collected film off sort lines and marketed the material, primarily to the export market.

### **Retail Plastic Bags and Film**

Retail stores with plastic bag collection programs are located in every U.S. state. More consumers are becoming aware of the option to recycle plastic bags but also other items such as newspaper and dry cleaning bags, and plastic film wrap (e.g., the wrap around paper towels and dry goods).

The chart on page 4 shows examples of types of bags, film wraps and film that can be recycled. For case studies of model recycling programs, go to [www.plasticbagrecycling.org](http://www.plasticbagrecycling.org).

## **Additional Information**

This is the third year Moore Recycling Associates Inc. has conducted this survey and produced this report for the Plastics Division of the American Chemistry Council.

The Plastics Division of the American Chemistry Council provides resources to communities, businesses and consumers to assist them in increasing awareness and education of the recycling of plastic bags and film. Information can be found on the national online web resource [www.plasticbagrecycling.org](http://www.plasticbagrecycling.org).

The 2007 National Post-Consumer Plastic Film and Bag Report has been prepared to provide information to parties interested in the recycling of plastics, in particular film and bag materials. Facilities developing a recycling process and all entities involved in the chain of collection, processing, distribution, and sale of recycled products have an independent obligation to ascertain that their plans, actions, and practices meet all relevant laws and represent sound business practices for their particular operations. Facilities may vary their approach with respect to particular operations, products, or locations based on specific factual circumstances, the practicality and effectiveness of particular actions and economic and technological feasibilities. This report is not designed or intended to define or create legal rights or obligations. ACC does not make any warranty or representation, either express or implied, with respect to the accuracy or completeness of the information contained in this report; nor does ACC assume any liability of any kind whatsoever resulting from the use of or reliance upon any information, conclusion, or options contained herein. This report was sponsored by the American Chemistry Council.