

Paper: Introduction

COMMODITY PROFILE

North Carolina Department of
Environment and Natural Resources
**DIVISION OF POLLUTION PREVENTION
AND ENVIRONMENTAL ASSISTANCE**

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OVERVIEW

The United States pulp and paper industry is the largest industry of its kind in the world. With a base of about 533 paper and paper board mills and 190 pulp mills, the United States' production of paper and paperboard accounted for more than 90 million tons in 1996, almost one-third of total world output. The pulp and paper industry in the southern United States alone is larger than that of any other country, with production at 49 million tons of paper and paperboard in 1994.¹

Recovered paper is making up a growing share of this paper production. Currently, more than 400 United States mills use at least some recovered paper, and more than 200 of those use it exclusively, according to the American Forest & Paper Association (AF&PA).²

In 1997, almost 37 million tons of recovered paper was consumed at United States paper and paperboard mills, up

from nearly 19 million tons in 1987. A majority of this recovered paper (almost 25 million tons) was used in paperboard manufacturing, and almost 11 million tons were used in paper manufacturing. Of the 11 million tons, more than three million was used to produce newsprint, almost four million was used in tissue manufacture, and another 2.5 million was used to produce printing and writing paper.³

Total recovered paper consumption is projected to grow 2.1 percent annually through the year 2000. However, this projection does not reflect aggressive capacity growth outside the United States. In comparison, recovered paper consumption rose 8.1 percent in 1996 and 7.2 percent in 1997.⁴

The fiber content of paper and paperboard products ranges from 100 percent virgin wood fibers to 100 percent recycled fibers, with limitless combinations of virgin and re-

cycled fiber in between. It is often possible to substitute one recovered paper grade for another in paper and paper-board manufacture, depending on the availability, quality, and price of the different fiber sources.

The Changing Face of Paper Recycling

Paper recycling continues to grow and change, based on new technologies, expanded collection systems, and foreign and domestic economic cycles. For this reason, some experts assert that “change is the only constant in paper recycling.”⁵ A recent article identifies the following trends as influencing paper recycling into the next century.⁶

- Many recovered paper consumers are changing how recovered paper is purchased, opting to negotiate prices rather than rely on published prices.
- Many businesses and local governments collect and sell fiber as a way to cut disposal volumes, not just in response to price fluctuations as was historically the case. For this reason, they would prefer to have stable markets and weaker prices instead of market swings with price improvement.
- Paper companies are consolidating. Industry consolidation has resulted in 20 companies consuming about 23 million tons, or 60 percent of the total consumption for North America. All 20 companies use recovered paper at multiple mills, and annual, company-wide consumption ranges from 600,000 to more than two million tons.⁷ Independent paper collection and processing firms also are merging.

Factors Affecting Paper Markets

The key factor influencing demand for recovered paper is consumer demand for finished products, which is driven primarily by economic conditions. In other words, in bad economic times, demand for products such as newspapers, corrugated boxes, and some printing and writing papers will fall. Because these products use at least some recovered paper, demand for recovered paper also will fall. Other key factors influencing recovered paper markets are highlighted below.

- **Discontinuities between supply and demand.** Supply and demand often are out of balance. For example, during the past few years, increases in foreign demand have created supply shortages and panic purchasing in domestic markets. In another example, the rapid buildup of recycling collection and processing infrastructure of the early 1990s created an oversupply, which contributed to price fluctuations.

It is uncertain how much new capacity will be added in the coming years, but most observers are optimistic that additions will not be excessive and this should keep supply in balance with demand. Many costly expansion projects have been delayed or canceled, largely because lackluster profits made such projects difficult to justify.

- **Quality issues.** The paper industry has specifications defining the permissible content of many grades of recovered paper. Contaminated paper is often reclassified as a less desirable and less valuable product.
- **Price.** Volatility has always characterized waste paper markets. Analysts predict that 1999 will be a weak year for recovered paper pricing, with strength returning in 2000 and 2001.⁸ In addition, pricing surges similar to those experienced in 1994 and 1995 may occur at least every five years, although it is unlikely they will be as drastic as in the past. During the next several years, the combination of steady demand growth and limited capacity additions should enable paper markets to strengthen.
- **Exports.** Export markets are variable, because they depend on economic and political factors in the importing countries. Recently the United States export market has been slow. A number of factors have contributed to this decline: competitive prices for virgin wood pulp, higher levels of paper recovery in other countries, and a decline in the worldwide economy in 1996. In addition, foreign paper buyers, in particular, have tended to enter the market somewhat spontaneously and present large purchase orders in short time periods thus driving prices up rapidly.⁹ Unfortunately, they tend to cut orders just as quickly and create market voids with parallel price declines.¹⁰

The current Asian financial crisis is changing the way fiber is traded. Because of volatile swings in Asian and Pacific markets, trading has become more complicated and risky. Driven by recovering economies in Mexico and Asia, export demand is expected to increase for all paper categories by 2002. Experts predict that most new capacity will be built in the fast growing and low cost markets of Asia and Latin America.

- **Recycled content legislation.** Legislation favoring recycled content products at the state or federal level can help create demand for recycled content papers. For instance, recycled content mandates and voluntary guidelines at the state level have stimulated demand for recycled content newsprint. Similarly, procurement policies at the state and fed-

eral level have encouraged agencies to purchase printing and writing paper with specified levels of recycled content.

- **Virgin pulp capacity.** While the process of converting virgin pulp requires more energy than deinking and repulping recovered paper, many mills continue to maintain large percentages of virgin material input due to the consistent quality, reliability, and availability of virgin pulp supplies. Several factors that ensure continued reliance on virgin fibers include the decentralized organization of recovered paper suppliers, the recent price volatility, and the quality problems associated with the supply. Nevertheless, experts predict that recovered paper usage will continue to grow in containerboard, paperboard, and newsprint sectors because it remains a lower cost source of fiber for these users.¹¹

Commodity Reports

The following reports address five commonly recycled paper grades: old corrugated containers (OCC), old newspapers (ONP), old magazines (OMG), residential mixed paper (RMP), and office paper. Each report characterizes supply

and demand in North Carolina and the region, evaluates the supply / demand relationship, and contains recommendations for balancing any discontinuities between supply and demand.

A primary data source for these reports was EPA's *Characterization of Municipal Solid Waste in the United States: 1997 Update*. Generation of paper and paperboard as calculated by EPA is lower than new supply as calculated by AF&PA because only post-consumer materials are included in EPA calculations (i.e., pre-consumer materials such as converting and fabricating scrap are not included). Similarly, total paper recovery as reported by AF&PA is higher than post-consumer recovery as calculated by EPA, because recovery of pre-consumer materials is not included in EPA estimates. Also AF&PA new supply data take account of imports and exports of converted products (such as envelopes and boxes), and thus are somewhat lower than new supply data used for EPA estimates. Overall, this means the AF&PA recovery rate will be higher than the calculated EPA recovery rate, although both are derived directly from AF&PA statistics. Every effort has been made in these reports to exclude recovered pre-consumer scrap from generation and recovery numbers.

¹ Miller Freeman, Inc., "Industry Overview: UNITED STATES," *Pulp & Paper 1998 North American Factbook*, p. 5.

² AF&PA, *Improving Tomorrow's Environment Today*, January 1995.

³ AF&PA, Inc. *1998 Annual Statistical Summary: Recovered Paper Utilization*, 12th ed., June 1998.

⁴ Miller Freeman, Inc., "Paper industry's use of recovered paper to slow considerably," *Paper Recycler*, vol. 8, no. 12 (Dec. 1997).

⁵ Powell, Jerry, "Seven hot trends in paper recycling," *Resource Recycling*, vol. XVII, no. 4 (April 1998).

⁶ Ibid.

⁷ Cesar, Mary, "Who's who in the North American paper industry?," *Resource Recycling*, vol. XVII, no. 4 (April 1998).

⁸ Personal communication, Bill Moore, Moore & Associates, September 1998.

⁹ Cesar, Mary, "Asian currency crisis affects UNITED STATES recovered paper markets," *Resource Recycling*, vol. XVII, no. 6 (June 1998).

¹⁰ Ibid.

¹¹ Personal communication, Bill Moore, Moore & Associates, September 1998.