

SOUTH CAROLINA

**RECYCLING MARKET
DEVELOPMENT
ADVISORY COUNCIL**

2002 ANNUAL REPORT





SOUTH CAROLINA
DEPARTMENT OF COMMERCE

January 15, 2003

The Honorable Mark Sanford, Governor
Members of the General Assembly

On behalf of the South Carolina Recycling Market Development Advisory Council, I am pleased to submit its annual report as required by the South Carolina Solid Waste Policy and Management Act of 1991.

During the past year, the Recycling Market Development Advisory Council has continued its work to ensure recovery of paper, plastic and metal used as raw materials by South Carolina manufacturers. The state's recycling business sector continues to be a vital component of South Carolina's economy, consisting of approximately 250 businesses and employing more than 10,000 people.

Through its participation in the Business Recycling Assistance Program, a partnership of the South Carolina Department of Commerce and the South Carolina Department of Health and Environmental Control, the Council has helped numerous South Carolina businesses and industry with their waste management, providing assistance to reduce waste, recycle by-products and other materials, identify reuse opportunities and purchase material made from recycled content. These efforts have resulted in saving the participating companies thousands of dollars in disposal costs, reducing their environmental impacts and saving precious landfill space.

Our other focus in 2002 was furthering the discussion for the implementation of a statewide Electronics Recycling Program. The rapidly growing electronic scrap waste stream continues to be a major concern, not only in South Carolina but throughout the United States. Proposed legislation modeled after our state's existing solid waste fee programs for tires and oil would provide a viable infrastructure to recapture electronic scrap for recycling.

The Council also remains concerned about the diminishing Solid Waste Trust Funds that support our state's recycling infrastructure. Adequate funding is vital for meeting the growing demands of our communities and protecting the state's natural resources is critical to South Carolina's future prosperity.

The Recycling Market Development Advisory Council is pleased with the progress made in the past year and looks forward to achieving its 2003 goals as outlined in the following report. We thank you for the opportunity to serve the State.

Sincerely,

A handwritten signature in cursive script that reads "A. Gerald Fishbeck".

A. Gerald Fishbeck, Chairman
Recycling Market Development Advisory Council



TEAM SOUTH CAROLINA
We perform. You win.

SOUTH CAROLINA
RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL
2002
ANNUAL REPORT

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ACKNOWLEDGEMENTS

The Recycling Market Development Advisory Council wishes to acknowledge the assistance and support provided by the following organizations:

- South Carolina Department of Commerce, Existing Business Services
- Department of Health and Environmental Control's (DHEC) Office of Waste Reduction and Recycling
- DHEC Center for Waste Minimization
- South Carolina Manufacturing Extension Partnership
- University of South Carolina
- Clemson University
- EPA Region 4

South Carolina's successful recycling market development program would not be possible without the benefits of these partnerships.

The Council would also like to thank Clabie Edmond for his service on the council, representing municipalities in our state for the past two years. His leadership and support will be missed.

INTRODUCTION

The Recycling Market Development Advisory Council (RMDAC) consists of fourteen members, representing industry, local governments, higher education, and the general public (See Appendix A, page 36). Established by the Solid Waste Policy and Management Act of 1991 and appointed by the Governor, the Council formulates programs and policies to encourage markets for new and existing recyclable materials.

Managed within the South Carolina Department of Commerce, the Recycling Market Development staff coordinates the activities of the Council while providing technical assistance and economic development assistance to recycling businesses and industry.

Mission Statement

The Council's mission is to assist in the development of markets in South Carolina for recovered materials and products with recycled content with the primary objectives of improved solid waste management, resource conservation, and economic development.

Guiding Principles

- To meet specific Council requirements contained in the Solid Waste Policy and Management Act of 1991.
- To assure existing and potential recycling businesses of a consistent, cost competitive, quality supply of required recyclables.
- To identify existing barriers to and opportunities for increased recovery and use of recovered materials recycled within the State and take appropriate actions to eliminate or maximize these conditions.
- To monitor and understand the implications of institutional, economic, market, and technical developments both in and out of the state that could measurably influence the generation and use of recyclables.
- To assist in the creation of jobs and investment of recycling industries in the state.
- To maximize the recycling rate within the state consistent with all appropriate environmental and economic considerations.
- To establish and maintain close working partnerships with allied state agencies and councils.

For additional information about the Council and its activities, refer to the S. C. Recycling Market Development Advisory Council web site at <www.callsouthcarolina.com>.

EXECUTIVE SUMMARY

Since its creation in 1992, the Recycling Market Development Advisory Council has worked to improve the supply of certain recyclable materials where significant demand exists as well as address the market needs for new or emerging recyclable materials. While many materials are readily available for recovery, the key to recycling's success is matching the collected items with businesses that can reuse and/or recycle the materials into new products or services.

Electronics Recycling: The New Frontier

A growing area of concern not only in South Carolina but throughout the United States is the proliferation of discarded electronics. Commonly referred to as e-waste, this rapidly growing waste stream continues to increase as technology develops better, faster and less expensive products.

In South Carolina, residents will generate 1.5 million obsolete TVs, computers, VCRs and electronic scrap this year. This amounts to about 30,000 tons of electronic equipment and does not include the unknown quantity of stored materials generated by the commercial, industrial or institutional sectors. And research shows that e-waste is growing at three times the rate of other municipal wastes.

Improper disposal of electronics pose a serious threat to public health and the environment due to the presence of such toxic materials as lead, chromium, mercury and brominated fire retardants in electronic scrap. The average computer monitor or CRT contains about four pounds of lead.

While large businesses are required to recycle scrap electronics through the U.S. Environmental Protection Agency's Universal Waste regulations, no such requirements exist for consumers and small businesses. Although many components of used computers and other electronics can be demanufactured for reuse, no collection or processing infrastructure currently exists.

Several other states, including North Carolina and California, are considering legislation to place an advanced recycling fee on the purchase of CRTs and televisions, much like our State's existing solid waste disposal fees on lead-acid batteries, oil, tires and white goods, to develop a funding source and infrastructure to facilitate electronics recycling. The Carolina Recycling Association adopted a resolution supporting proposed electronics recycling legislation in both North and South Carolina (See Appendix B, page 39).

Given the success of South Carolina's Solid Waste Trust Funds for oil and tires to build a thriving recycling infrastructure, the Council encourages the development of a statewide Electronics Recycling Program that would include the following components:

- *A fee on the purchase of new computer monitors and televisions.* The fee would create an Electronics Recycling Trust Fund. The monies collected would be funneled back into communities through local governments and businesses that collect, transport, process and recycle this equipment. It would also encourage innovative recycling technologies and economic development.
- *An Electronics Equipment Recycling Committee comprised of representatives from the public and private sectors.* This committee would provide review and oversight of the trust fund and program.
- *An assessment of the recycling program after five years.* An assessment would determine the program's effectiveness in creating satisfactory markets, a sufficient recovery infrastructure and an adequate funding mechanism to support electronics recycling in South Carolina.
- *A state regulatory program that recognizes the best management practices for scrap electronic equipment.* This program would aid recycling of various materials.

There is growing concern among the public that electronics are properly handled and not simply disposed with the other solid waste. By creating the Electronics Recycling Program, true progress can be made to properly recycle this material, avoid environmental contamination and preserve valuable resources.

The Council strongly supports and recommends the Governor and General Assembly proceed with legislation to establish a statewide program for the recovery and recycling of electronic scrap.

Additional Recycling Market Development Efforts

RMDAC supports policy and initiatives that encourage the expansion of recycling markets, particularly within the private sector. The South Carolina Department of Commerce staff that supports RMDAC provides technical and economic development assistance to recycling companies and other industry in the state.

Some of RMDAC's accomplishments or initiatives from the past year are listed here. Detailed information on these and other projects are provided in the Committee Reports section of this report beginning on page 9.

- Recovering more of the plastic bottles that consumers are throwing away at record rates. South Carolina processors and manufacturers use this material for existing recycled plastic and fiber markets.
- Supporting a state-of-the-art technology transfer service at Clemson University to build better roads and design civil engineering applications using rubber from recycled tires.
- Partnering with the Department of Health and Environmental Control through the South Carolina Business Recycling Assistance Program to provide cost effective waste reduction and recycling strategies for business, government and other South Carolina organizations.
- Leading efforts among agencies and organizations to prevent further reduction of the Solid Waste Trust Funds.
- Provide continuing support for the South Carolina Waste Exchange, a free web-based program designed to facilitate recycling and reuse of post-industrial and post-consumer materials.
- Supporting a recycling economy in South Carolina of 250 companies with a combined employment of more 10,000 people.

2003 GOALS AND OBJECTIVES

The Recycling Market Development Advisory Council has identified the following goals and objectives for 2003. These objectives will set the primary agenda for the Council and its committees during the year.

- Continue to educate key organizations and individuals about the potential impact of further raids on the Solid Waste Trust Funds.
- Continue to build legislative support for passage of Electronics Recycling Bill.
- Monitor the progress of the National Electronic Product Stewardship Initiative (NEPSI) and regulatory restrictions for electronic waste.
- Continue to monitor establishment of all-plastic bottle recycling programs in the state.
- Continue to encourage further recycling of construction and demolition (C&D) debris in South Carolina.
- Work with other organizations to develop guidelines to increase recycling participation in rural counties.
- Work with other organizations to increase participation in recycling and waste reduction programs by state agencies and state-supported institutions.
- Continue to monitor the feasibility of glass recycling programs in the state.
- Identify the feasibility of and potential supporters for landfill surcharge fee to fund state recycling and market development programs.
- Continue to provide business and industry with recycling and waste reduction assistance through the Business Recycling Assistance Program.
- Prioritize post-industrial waste and consider as targeted material for further market development work.
- Continue work with the national carpet recycling initiative, Carpet America Recovery Effort (CARE), to develop markets for scrap carpet.
- Continue to monitor tire recycling market supply and demand in South Carolina.
- Promote higher value uses for scrap tires.
- Continue to support the development and expansion of recycling businesses in South Carolina.

2002 PROGRAM INITIATIVES

The goals and objectives in last year's annual report are listed below and helped define the Recycling Market Development Advisory Council's work plan for 2002. Four committees comprised of RMDAC members and staff, along with support from DHEC's Office of Solid Waste Reduction and Recycling, addressed each of these objectives. The committees were created to address market development issues for recyclable materials currently being collected, new or emerging recyclables, scrap tires and policy issues.

2002 Goals and Objectives

- Continue to educate key organizations and individuals about the potential impact of further raids on the Solid Waste Trust Funds.
- Assist in establishing an all-plastic bottle recycling program in at least one new community in South Carolina.
- Support the South Carolina Partnership on Plastic Recycling.
- Work with other organizations to assist industries in implementing solid waste and recycling programs.
- Work with DHEC to encourage further recycling of construction and demolition debris in South Carolina.
- Finalize the Wood Residue Market Development study with USC.
- Plan future budget needs for RMDAC.
- Continue to promote higher value uses of scrap tires.
- Continue to track the markets for scrap tires in South Carolina.
- Provide assistance to tire processing companies expanding into new value-added product lines.
- Examine other incentives to encourage crumb rubber production in South Carolina.
- Identify new and support existing carpet recovery efforts in South Carolina and the region.
- Explore alternative markets for scrap carpet, including fuel supplements for the cement industry.
- Work with national carpet recycling initiative and Carpet America Recovery Effort (CARE).
- Monitor regulatory restrictions for electronic waste and consider proposal for future landfill ban.
- Continue to work with the National Electronic Product Stewardship Initiative (NEPSI).
- Support the development and expansion of recycling businesses in South Carolina.

The following committee summaries provide details on the progress made toward achieving these objectives and other related initiatives.

ESTABLISHED RECYCLABLES COMMITTEE

Mission

The Established Committee is charged with facilitating the recovery of established recycling commodities for reuse by the manufacturing community. This committee encourages the increased collection and use of these materials and looks at ways to overcome barriers to markets.

2002 Summary

- **Assist in establishing an all-plastic bottle recycling program in at least one new community in South Carolina**

The City of Columbia was approached about instituting an all-plastic bottle collection program in 2002, with a planned start-date in January. However, as time grew closer, the solid waste director kept postponing the start date until he finally admitted in late spring that the City was not going to pursue the all-plastic bottle collection after all. DHEC identified Charleston and Darlington counties as potential pilots. Then Greenville County agreed to kick-off an all-plastic bottle program in January 2003. Staff will work with DHEC and the county to assist with publicity efforts and provide support as needed.

- **Support the South Carolina Partnership on Plastic Recycling**

With no communities coming forward to implement an all-plastic bottle collection program, the S.C. Plastics Partnership has not met actively in 2002. However, the group has provided some funding to support plastics collections in 30 schools throughout the state. The partnership also has tried to work with the University of South Carolina to recover plastic bottles from athletic events. Although the group was unable to recover plastics bottles at the football stadium, plans are being discussed to set up collections at the new Carolina Center.

- **Work with other organizations to assist industries in implementing solid waste and recycling programs**

Through the newly formed Business Recycling Assistance Program (B-RAP), a partnership of the Recycling Market Development Advisory Council and S.C. Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling (OSWRR) and the Center for Waste Minimization (CWM), the Established Committee helped develop and produce a South Carolina-specific guide for businesses on how to implement a waste reduction and recycling program. The guide provides specific information on conducting a waste audit, securing markets, preventing waste at the source, educating employees and keeping records of waste diversion as well as featuring information on S.C. companies that have successful programs in place.

In addition to producing the workbook, staff and a representative from the Established Committee participated in a training seminar for the state's recycling coordinators to demonstrate how the workbook can be used to increase industry and business recycling. Other activities coordinated through (B-RAP) included presentations to Chambers of Commerce (Columbia, Greenville and Florence), B-RAP's first quarterly newsletter, and more than 40 site visits to review companies' waste management programs.

- **Work with DHEC to encourage further recycling of construction and demolition debris in South Carolina**

DHEC is in the process of revising its solid waste landfill regulations, including its Construction and Demolition (C&D) Debris regulations to tighten requirements for using C&D materials as beneficial fill. The new regulations may not be presented to the legislature until late in the 2003 session so new changes may not be approved until 2004.

Staff will continue to monitor new and existing C&D recycling businesses operating within the state and work with DHEC to promote increased C&D recycling by local governments.

EMERGING RECYCLABLES COMMITTEE

Mission

The Emerging Recyclables Committee assists in developing markets for emerging or under-collected materials.

2002 Summary

- **Host a program to identify new or support existing carpet recovery efforts in South Carolina and the region**

The Committee met with a North Carolina company that collects scrap carpet and padding for recycling from retail and industrial clients, including several accounts in South Carolina. Demand for post-consumer carpet is weak given general economic conditions and low market prices for competing resins. The Evergreen carpet recycling plant in Augusta, Georgia, which closed last year, was the primary market for nylon 6 carpet. The Evergreen venture initially processed large volumes of nylon 6 carpet and was the catalyst for many carpet recovery programs around the U.S. With the collapse of this market large-scale scrap carpet recovery programs have stopped.

- **Explore markets for scrap carpet within the cement production industry**

Lafarge has examined the use of scrap carpet as an alternative fuel at its Harleyville, South Carolina cement kiln. Currently processing and transportation costs prohibit the use of this material in cement production.

- **Work with the national carpet recycling initiative and Carpet America Recovery Effort (CARE)**

The Committee met with an executive committee member of CARE to learn about the objectives for this national carpet recycling initiative. CARE is a joint industry-government effort to increase the amount of recycling and reuse of post-consumer carpet and reduce the amount of waste carpet going to landfills. Various committees within CARE will work on market development, business development, infrastructure, and funding.

RMD staff is now a member of CARE Market Development Committee and participated in several conference calls during the course of the year. Staff provided input to this committee's three-year operational plan.

- **Monitor regulatory restrictions for electronics waste and consider future landfill ban**

The Committee continues to monitor state and national efforts to manage electronic scrap. Current regulations in South Carolina limit landfill disposal for large quantity categories of this material. Individuals and small quantities can still dispose of electronics in lined landfills.

Several organizations, including DHEC's Office of Solid Waste Reduction and Recycling and the Business Recycling Assistance Program (B-RAP), continue to promote proper management of scrap electronics, particularly computer and television monitors. (See page 13.)

EPA established guidelines in 2002 that encourages the recovery of CRT glass by reducing the hazardous waste guidelines if the product is recovered for recycling. (See pages 15-16.) The proposed rule excludes CRTs from hazardous waste designation when they are recycled, but bans them from landfilling. As written, the rule would avoid the necessity of requiring recyclers to obtain hazardous waste management licenses when they collect, repair or recycle CRTs. Although there has been general support from industry on the

proposed rule, some feel that there is still an exposure to exporting electronics scrap that should be addressed.

Several states have suggested a landfill ban on electronic waste, particularly CRTs that contain lead, as a means of dealing with market and infrastructure development of this waste stream. California and Massachusetts currently prohibit landfill disposal of monitors and televisions. This may be desirable in South Carolina, however, adequate markets and funding for recovery systems must be in place first.

- **Continue to work with National Electronics Product Stewardship Initiative (NEPSI)**

The National Electronics Product Stewardship Initiative was created to bring stakeholders together to develop solutions to the issue of electronic products management. The infrastructure for collecting, reusing and recycling electronics in the United States has not kept pace with this growing waste stream, and the number of electronic products entering the waste stream is projected to increase dramatically unless reuse and recycling options expand. All stakeholders involved, federal, state and local governments, manufacturers, retailers, recyclers, and environmental groups, are concerned about and motivated to find a solution to this issue.

The NEPSI group's main goal for the dialogue is "the development of a system, which includes a viable financing mechanism, to maximize the collection, reuse, and recycling of used electronics, while considering appropriate incentives to design products that facilitate source reduction, reuse and recycling; reduce toxicity; and increase recycled content."

RMD staff has participated as a government stakeholder in NEPSI discussions. Three subgroups were formed to study financing models, regulatory issues and infrastructure needs. Staff worked with the Financing subgroup to identify various models considering the following

- Shared responsibility- what each stakeholder group contributes
- What does fee cover
- Who manages the money
- Retailer involvement, need to have this

At its March meeting in Washington, NEPSI participants agreed to work toward a national system for managing used electronics using front-end fee mechanism to finance the programs. (See Appendix C, page 40.)

South Carolina and other states continue the process to initiate electronics recycling legislation while participating in the NEPSI dialogue. Many government participants believe that state legislative efforts will be the catalyst for a national system.

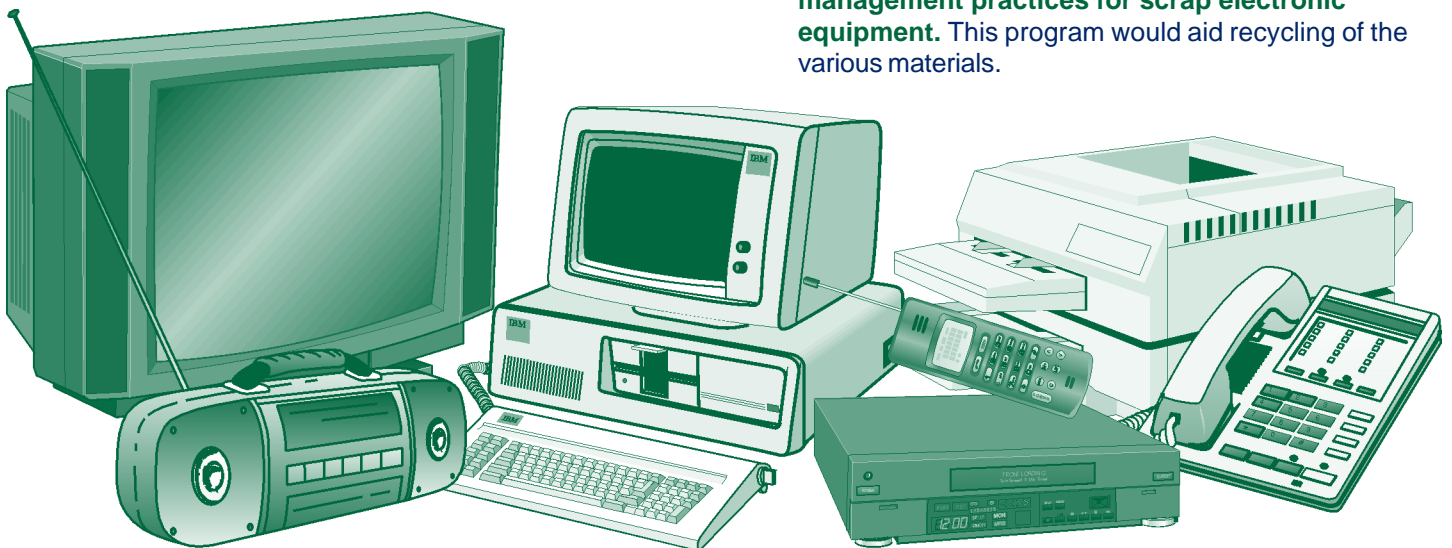
Electronics Recycling in South Carolina

In 1997, the Recycling Market Development Advisory Council (RMDAC) began examining the issue of recycling electronic equipment—TVs, VCRs, computers and monitors, telephones, stereos, and microwave ovens. Based on existing research, RMDAC determined that:












- ♻️ The volume of this scrap material continues to grow as new technology develops "better, faster, and cheaper" products.
- ♻️ Certain materials associated with electronics are hazardous.
- ♻️ There are qualified businesses in South Carolina that can provide electronic recycling services for a fee.
- ♻️ Several states have implemented or are considering programs to recover these products.
- ♻️ Large generators of scrap electronics, such as government and industry, are already disposing of this equipment through certified recycling facilities.
- ♻️ The S.C. Department of Health and Environmental Control (DHEC) has ruled that cathode ray tubes (CRTs) found in TVs and computer monitors should be managed as hazardous waste unless these components remain intact (i.e., if they are not crushed) or are sent to a recycler.

RMDAC proposes the development of a statewide Electronics Recycling Program, similar to existing programs developed to successfully collect and recycle used oil and tires. The proposed program would include the following:

- ♻️ **A fee on the purchase of new computer monitors and televisions.** This fee would provide funding for the recovery and recycling of all scrap electronic equipment. Through the creation of an Electronics Recycling Trust Fund, monies collected would provide grants and loans to both local governments and businesses that collect, transport, process and recycle this equipment. It would also encourage innovative recycling technologies and economic development.
- ♻️ **An Electronic Equipment Recycling Committee comprising representatives from the public and private sectors.** This committee would provide review and oversight of the trust fund.
- ♻️ **An assessment of the recycling program after five years.** An assessment would determine the program's effectiveness in creating satisfactory markets, a sufficient recovery infrastructure and an adequate funding mechanism to support electronics recycling in the state.
- ♻️ **A state regulatory program that recognizes best management practices for scrap electronic equipment.** This program would aid recycling of the various materials.



South Carolina Electronic Equipment Facts

-  Nationally, it is predicted that 55 million whole personal computers will be disposed in landfills by 2005, in addition to a portion of the 143 million processed scrap computers. This amount equals 170 million cubic feet of computers that, if piled on one acre, would reach a height of 4,000 feet.¹
-  This year, South Carolina residents will generate about 1.5 million obsolete TV's, computers, VCR's and other electronic scrap. This amounts to 30,000 tons of electronic equipment and does not include the unknown quantity of stored products or material generated by the commercial, industrial, or institutional sectors.
-  Research shows that the electronic waste stream is growing at three times the rate of other municipal wastes.
-  The discarded equipment typically includes TVs, audio/stereo components, computers and monitors, VCRs, keyboards, printers, telephones and microwave ovens. TVs and monitors make up nearly 50 percent of this waste stream.
-  CRTs found in computer monitors and TVs are at least 20 percent lead oxide by weight and the average CRT contains at least four pounds of lead.
-  An EPA study found that 24 percent of the lead in municipal solid waste comes from CRTs.
-  Electronic equipment contains precious metals, copper, steel, aluminum, glass, and plastic, all of which can and should be recycled.
-  Electronic equipment can contain a variety of toxic materials, including lead, mercury, brominated fire retardants, and, in older equipment, polychlorinated biphenyls (PCBs).
-  In South Carolina, there are now more than four million computer monitors and TVs in use at the residential level. This number does not include obsolete equipment in storage.
-  The transition to high-definition TVs in 2006 will have a significant impact on the electronics waste stream.
-  States that are currently managing scrap CRTs include California, Florida, Massachusetts, Michigan, Minnesota, New Jersey, and Wisconsin. North Carolina and several other states are evaluating various electronics recycling programs.

¹ Carnegie Mellon University; 1991 Computer Study; Computer Disposition Data-1997 Update.

Web Sites for E-Waste Information



The U.S. EPA's "WasteWise" Program
www.epa.gov/wastewise

The National Recycling Coalition's
Electronics Recycling Initiative
www.nrc-recycle.org/programs/electronics/index.htm

The National Safety Council's
Electronic Product Recovery and Recycling Directory
www.nsc.org/ehc/epr2/recycler.htm





United States
Environmental Protection
Agency

April 2002
EPA530-F-02-018
www.epa.gov/osw

More Recycling and Reuse Proposed For Electronic Wastes and Mercury- Containing Equipment

The Environmental Protection Agency (EPA) is promoting the safe reuse and recycling of cathode ray tubes and mercury-containing equipment. The Agency believes that revising existing regulations for these growing waste streams will facilitate better collection; lead to more recycling and less disposal; and will better protect the environment. It will also help keep mercury and lead out of municipal landfills and incinerators.

Background

Cathode Ray Tubes (CRTs). CRTs are the video display components of televisions and computer monitors. CRT glass typically contains enough lead to be classified as hazardous waste when it's being recycled or disposed of. Currently, businesses and other organizations that recycle or dispose of their CRTs are confused about the applicability of hazardous waste management requirements to their computer or television monitors. The Agency is proposing to revise regulations to encourage opportunities to safely collect, reuse, and recycle CRTs.

Mercury-containing Equipment. Mercury is contained in several types of instruments that are commonly used by electric utilities, municipalities, and households. Among others, these devices include barometers, meters, temperature gauges, pressure gauges, sprinkler system contacts, and parts of coal conveyor systems. EPA has received data on mercury-containing equipment since 1995, when it issued the first federal universal waste rule. The Agency believes that adding mercury-containing devices to the universal waste stream will facilitate better management of this waste.

Universal wastes are items such as batteries, thermostats, pesticides, and lamps that are commonly thrown into the trash by households and small businesses. Handlers of universal wastes follow tailored standards for storing, transporting, and collecting wastes. These standards are designed to encourage collection and keep these wastes out of municipal landfills and incinerators.

Action

Cathode Ray Tubes. To encourage more reuse and recycling, intact CRTs being sent for possible reuse are considered to be products rather than waste, and therefore not regulated unless they are being disposed of. If CRT handlers disassemble the CRTs and send the glass for recycling, EPA is also proposing to exclude them from being a waste, provided they comply with simplified storage, labeling, and transportation requirements. Furthermore, the Agency believes that if broken CRTs are properly containerized and labeled when stored or shipped before recycling, they resemble commodities more than waste.

Finally, processed glass being sent to a CRT glass manufacturer or a lead smelter is excluded from hazardous waste management under most conditions. If the glass is being sent to any other kind of recycler, it must be packaged and labeled the same as broken CRTs. The Agency believes that these proposed changes will encourage the recycling of these materials, while minimizing the possibility of releasing lead into the environment.

Mercury-containing Equipment. The universal waste rule tailors management requirements to the nature of the waste in order to encourage collection (including household collections) and proper management. Universal waste generators, collectors, and transporters must follow specific recordkeeping, storage and transportation requirements. The Agency is proposing the same tailored requirements for mercury-containing equipment. Final disposal and recycling requirements remain unchanged.

For More Information

This fact sheet and other documents related to this rule are available on the Internet at <<http://www.epa.gov/epaoswer/hazwaste/recycle/electron/crt.htm>>. For additional information, or to order paper copies of any documents, contact the RCRA Call Center. The Call Center operates weekdays, 9:00 a.m. to 5:00 p.m., and may be reached by dialing: 703-412-9810, TDD 703-412-3323, 1-800-424-9346, or TDD 1-800-553-7672.

TIRE COMMITTEE

Mission

The Tire Committee focuses on strategies to encourage diversified markets for whole and processed scrap tires.

2002 Summary

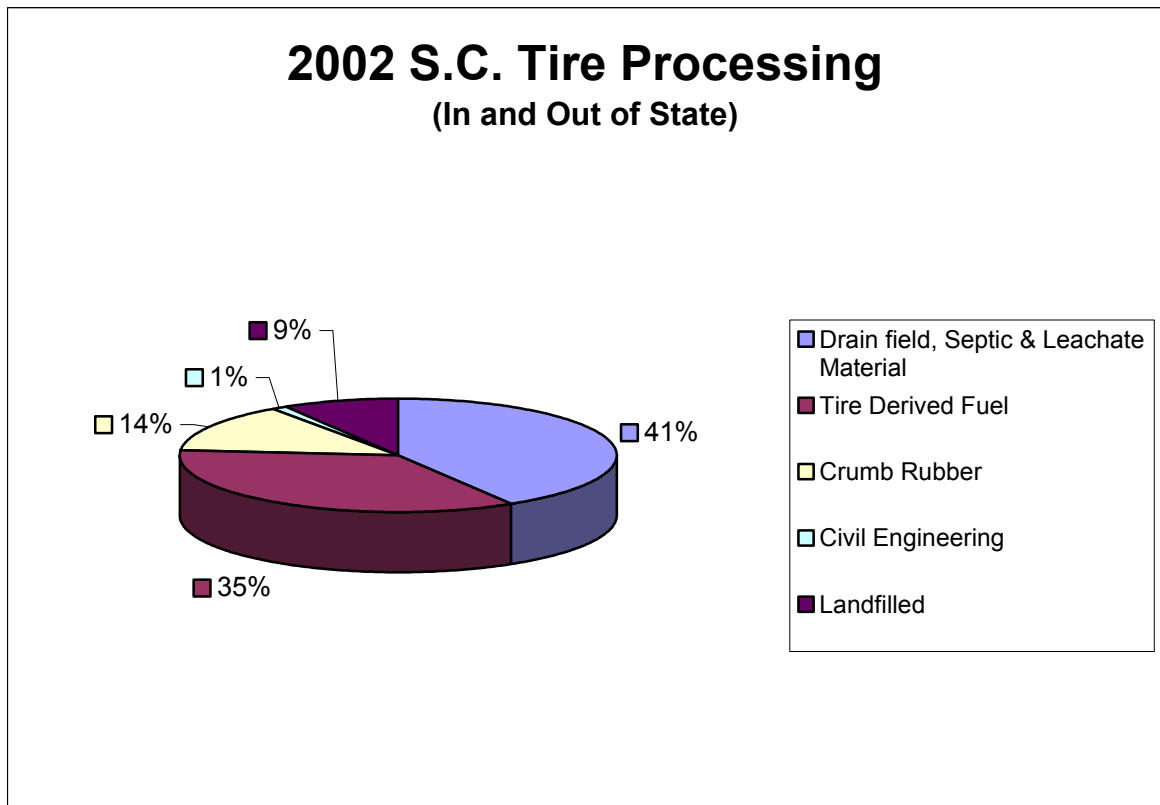
- **Continue to promote higher value uses of scrap tires**

The Committee is working with DHEC to develop an annual reporting method for the approved scrap tire processors that will identify how S.C. tires are recycled. Data will be used to measure current processing activities against desired higher value recycling options.

RMD staff, as part of DHEC's Waste Tire Committee, is also working with Asphalt Rubber Technology Service (ARTS) at Clemson University to review proposals for new applications for processed tire rubber.

- **Continue to track the usage of scrap tires in South Carolina**

According to a RMDAC survey of DHEC-approved tire processors, a total of 6,898,100 S.C. tires were processed in 2002. The various end markets for these products are reflected in the graphic below. The Tire Markets section on page 34 provides more detailed information on the survey results.



- **Provide assistance to tire processing companies expanding into new value-added product lines**

RMD staff has provided assistance to two new companies in South Carolina that will result in value-added products from scrap tires. RTG in Berkeley County will produce crumb rubber for use in asphalt paving and rubber product manufacturing. StrongSeal Recycled Rubber Products in Clinton makes a rubber roofing underlayment using scrap tire crumb rubber as a raw material.

POLICY COMMITTEE

Mission

The Policy Committee assists RMDAC and its committees in implementing strategic market development policy and programs, giving consideration to legislative, governmental, and private sector concerns.

2002 Objectives

- **Continue to educate key organizations and individuals about the potential impact of further raids on the Solid Waste Trust Funds**

State budget deficits during the past two years have resulted in the loss of Solid Waste Trust Funds for other programs. These funds are collected from consumers when they purchase tires, motor oil, white goods, and lead-acid batteries. The 1991 Solid Waste Act directed that these funds be used to help local government establish recycling programs and manage problem wastes. Grants for these programs in fiscal years 2001 and 2002 were cut significantly due to the loss of funds. As a result, funding for important rural community recycling programs and innovative grants for expanding recycling programs were denied.

RMDAC has been concerned that using the trust funds for other programs sends the wrong message to local governments, recycling businesses, and industry when it comes to recycling. Recycling is a proven method of resource and energy conservation, solid waste management, and cost efficiency. Recycling economic development impact is apparent in South Carolina with over 10,000 people employed in this sector. A recent EPA report shows that the U.S. recycling industry generates more than \$236 billion in gross annual revenues, representing a significant force in the country's economy. (See Appendix E, page 45.)

Many of the materials recovered in South Carolina recycling programs provide local industries with valuable raw materials. Nucor, the largest U.S. steel producer, uses scrap metal. Wellman Industries uses PET plastic bottles to make polyester fiber. Sonoco, a world leader in packaging manufacturing, captures various grades of paper to make its products. The trust funds should be protected in order to sustain SC's recycling infrastructure.

The Committee met with the following organizations to discuss the impact of losing money from the trust funds and the need to protect the funds in the coming years:

- Solid Waste Advisory Council
- Waste Tire Committee
- S.C. Manufacturers Alliance
- DHEC Commissioner
- Santee Cooper
- S.C. Recycling Coordinators
- S.C. Association of Counties
- Carolina Recycling Association
- Palmetto Pride: The Governor's Council on Litter

- **Plan for RMDAC's future budget needs**

The Recycling Market Development Advisory Council's projected budget requires additional funds to grow the program. RMD staff continues to support recycling business expansion, industrial recycling, and market development actions. Expanding to meet the demands in

these areas requires new funding. Technical assistance grants and loans could result in tangible growth for qualified recycling businesses. Additionally, management responsibilities of the Business Recycling Assistance Program (B-RAP) now reside under the RMD program and new funding would build on the successes industries are already experiencing. (See Appendix D, page 44.) South Carolina's RMD program has made progress since its inception but it is severely limited by a budget that has not increased in 10 years.

A poor national and state economy has caused drastic budget reductions in most state government programs. The current political and economic climate has certainly prevented RMDAC from securing additional funds. However, looking toward the future, partnerships with allied organizations, such as the Carolina Recycling Association and B-RAP, should continue and efforts to increase funding for basic recycling should be a central theme. Market development funding should be a key element in all of these programs.

- **Continue to seek industry and local government support for an electronic equipment recycling program in South Carolina**

As mentioned in the Executive Summary, disposal and recycling of old electronics continues to be a concern among local and state governments and original equipment manufacturers.

Senate bill 1031 was introduced to legislature in 2002 with the intent of establishing a comprehensive electronic equipment recycling program in South Carolina. The program depends on funding from an advance recycling fee (ARF) paid on the purchase of new televisions and computer monitors, similar to recycling fees assessed on purchase of tires, motor oil, batteries and white goods. (See page 13 for more details on the program.)

Bill 1031 was not passed due to concerns from an electronics manufacturer. RMDAC has met with the company to identify issues of concern. In preparing to offer this program for re-introduction to the General Assembly, RMDAC has provided technical information and support on electronics recycling to the following:

- S.C. State government agencies
- Association of Counties
- Sierra Club
- Carolina Recycling Association
- S.C. Wildlife Federation
- S.C. Chapter of League of Women Voters
- County solid waste and recycling professionals

RECYCLING MARKET DEVELOPMENT STAFF ACTIVITY

In addition to the Council's committee activities, the Recycling Market Development staff worked with new and existing industry in South Carolina to promote waste reduction and recycling opportunities.

Direct assistance was provided to 245 industries and governmental entities by the RMDAC staff. The South Carolina Department of Commerce's Business Visitation Program still generates numerous requests for assistance in recycling and waste reduction and RMDAC staff followed up with these requests as part of the South Carolina Business Recycling Assistance Program (see below).

Of the businesses assisted in 2002, 108 were recycling companies that were provided assistance with business development planning, product marketing and accessing financial, regulatory, or other resources. These companies were starting new businesses, establishing an additional facility in South Carolina, or expanding existing in-state operations.

- **South Carolina Business Recycling Assistance Program**

The South Carolina Business Recycling Assistance Program (B-RAP) continued to provide free technical assistance to business and industry throughout the state. B-RAP is a partnership of DHEC's Center for Waste Minimization, the Office of Solid Waste Reduction and Recycling and RMDAC. Its mission is to provide a variety of technical assistance opportunities to businesses, industry, government agencies and others in four specific areas: waste reduction, recycling, buying recycled, and recycling markets/market development.

Assistance provided to both new and existing businesses included:

- Referrals to the S.C. WasteXchange, a free online service sponsored by RMDAC, DHEC and the South Carolina Manufacturing Extension Partnership;
- Identification of potential markets/end-users for recovered materials through the *Index of Waste Minimization Resources* and RMDAC's recycling businesses database;
- On-site visits and assessments to determine prevalence of recyclable materials as well as quality of materials;
- Educational materials, including topic-specific facts sheets, quarterly *B-RAP News* newsletter and B-RAP web site (www.scdhec.net/brap); and
- Presentations to various Chambers of Commerce and other civic and environmental organizations promoting the financial benefits for businesses that adopt waste reduction and recycling activities.

See Appendix D for more on B-RAP's first year successes.

- **Recycling Business Development Workshop**

Working with the Small Business Development Center (SBDC) at the University of South Carolina and the Carolina Recycling Association, RMDAC hosted a workshop for recycling business leaders and entrepreneurs interested in starting recycling operations. Twenty-eight participants received information on resources available to market their products and services as well as business planning advice from RMDAC and SBDC staff. In addition, representatives from Business Carolina, BB&T and Business Development Corporation shared information on business financing options for small and start-up operations.

- **Grants for Recycling Businesses**

Using the balance of funding provided by the U.S. Environmental Protection Agency's Job Through Recycling Grant that RMDAC received in 2000, RMDAC awarded \$29,000 for three recycling market development projects. Two of the grants funded proposals to examine alternative uses for fly ash and bottom ash generated by coal-fired utilities. One project would use this material to produce shaped building products, primarily floor and wall tiles. The other uses fly ash to develop a lightweight concrete product for structural applications in projects such as multi-storied buildings and bridge decking. The third grant recipient was studying a technique to remanufacture Cathode Ray Tubes (CRTs) as an alternative to landfilling used CRTs.

- **Recognition for Businesses**

In conjunction with the S.C. DHEC's Office of Solid Waste Reduction and Recycling's "Recycle Guys" Awards Program, RMDAC co-sponsored two awards for business and industry that emphasize the importance of recycling and waste reduction by the commercial and industrial sector. In January 2002, Draexlmaier Automotive of America, located in Duncan, SC, was recognized as the Best Industry Recycling Program for its outstanding efforts to recycle 70 percent of its waste stream. Circle Environmental of Columbia, SC, was awarded the Best Waste Reduction Award as a recycling business that makes and leases absorbent pads, booms and socks for manufacturing and industrial settings. The company is able to help others eliminate potentially hazardous waste streams by turning them into reusable products.

- **Other Activities**

Staff members actively participate as members of the following organizations or councils:

- Carolina Recycling Association
- CRA Midlands Networking Council
- America Recycles Day Statewide Steering Committee
- Solid Waste Advisory Council
- Waste Tire Committee
- Ripple-Effect, Inc.

REQUIREMENTS OF THE 1991 SOLID WASTE ACT

The Solid Waste Policy and Management Act of 1991 requires that the Recycling Market Development Advisory Council consider the following elements in its annual report.

Any Revisions Which the Council Determines are Necessary to its Initial Report

There are no revisions to be added at this time.

A Description And Analysis of the Amounts and Types of Solid Waste Materials Recovered or Recycled in This State During the Preceding Year

Recycled Materials reported in Tables 1 and 2 are compiled by DHEC from their annual county solid waste survey. Figures are reported on a fiscal year basis for a period of July 1 through June 30. Data reflected in this report is from FY 2002.

Table 1 shows the amount of recyclable material collected by local government programs, primarily serving residential households in South Carolina. This category is considered to be post-consumer material.

Compared to last year's recovery rate, performance is mixed for the various commodities. Paper and plastic collections improved, which follows the five-year trend reflected on page 21. The decrease in glass follows the five-year trend while the metal recovery rate spiked in 2001. The 2002 metal amount is probably more in line with the five-year trend analysis.

Table 2 includes totals reported to counties by business and industry as well as the post-consumer totals shown in Table 1.

According to DHEC, counties provided less information on recycling data from the Commercial, Institutional/Non-Profit, and Industrial categories than in 2001. Some counties reported fewer responses by these groups while others cited sending fewer surveys to these groups. While the percentage drops do seem to signal a concern, the numbers reflect actual results and are considered by DHEC to be more accurate than previous years' reports that used a formula to calculate total recycled material amounts.

Recommendations Regarding Materials Which Should be Added or Deleted From Source Separation, Recovery, and Recycling Programs

Electronic equipment should be collected for recycling where economically feasible. This category includes discarded products such as computers, televisions computer monitors and VCR's (see Emerging Recyclables Committee Report, page 11.) Currently state and federal regulations prohibit industry from disposing of large quantities of these materials in municipal solid waste landfills. Regional and local markets exist for certain electronic scrap and collection programs have been initiated on a limited basis by South Carolina counties.

Recommendations Including Tax Incentives, to Facilitate the Development of Markets for Recovered Materials or Products in This State

No recommendations are made for this section.

Table 1
Post-Consumer Recycled Materials
(Reported by County/Residential)
Tons

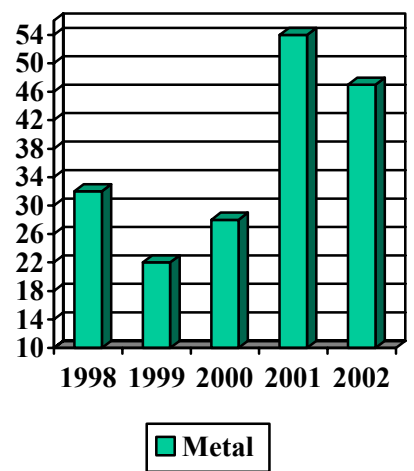
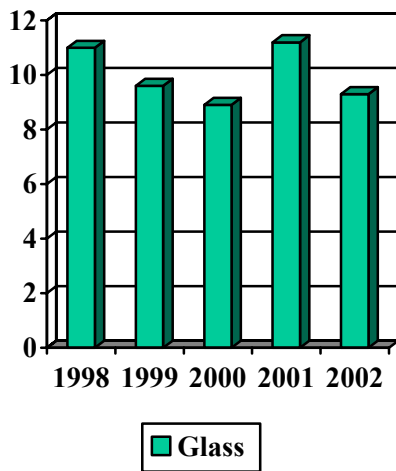
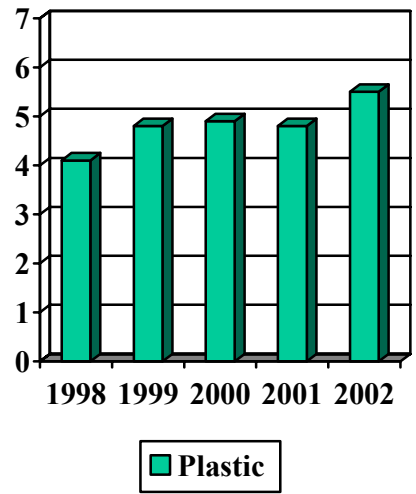
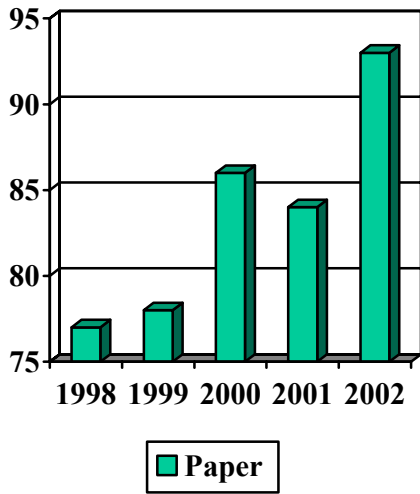
	2002	2001	Percent Change
Paper	93,411	83,935	11%
Metal	47,578	54,498	-12%
Glass	9,259	11,254	-17%
Plastic, total	5,513	4,814	14%
#1 PET	1,544	1,448	6%
#2 HDPE	2,635	1,412	86%
Mixed	1,064	1,954	-45%
Banned, total	266,313	198,744	33%
Lead acid batteries	5,618	2,638	112%
Used oil	31,611	8,672	264%
Waste tires	22,138	25,560	-13%
White goods	27,956	31,698	-11%
Yard waste	178,990	130,176	37%

Table 2
Total Recycled Materials
(Reported by County/Residential, Commercial, Institutional/Non-Profit, Industrial)
Tons

	2002	2001	Percent Change
Paper	438,804	728,494	-39%
Metal	333,073	500,231	-33%
Glass	9,848	13,814	-28%
Plastic	25,588	53,625	-52%
Banned¹	344,920	334,771	3%

¹ Banned items include tires, oil, lead-acid batteries, yard waste and white goods

South Carolina Post-Consumer Recycling Five Year Trends¹ (Tons)



¹ quantities are based on data from Table I, reported in 1000 ton units

MARKETS UPDATE

Industry representatives on the Recycling Market Development Advisory Council provide the following market updates. These include the primary commodities typically recovered in most municipal recycling programs as follows:

Glass	clear, brown, green
Paper	newspaper, corrugated
Plastics	PET, HDPE – clear and pigmented
Metal	ferrous and non-ferrous metals
Used Oil	oil, filters, bottles
Tires	

Each update will consist of the following four sections which include comments on the basic market factors of supply, demand and pricing for each recovered material.

2002 Summary

A discussion on major changes in supply, demand and pricing for this material that have occurred during the past year, including both national and state perspectives with explanations of significant differences between the two.

2003 Outlook

Forecasts for the coming year and circumstances impacting supply, demand, and pricing for the material relative to 2002 conditions.

Future Trends

A discussion of long term trends in supply, demand and pricing beyond 2002.

RMDAC Action

Actions that this Council should consider to improve market factors.

GLASS

2002 Summary

Glass collected in South Carolina for recycling is sent to two regional processors; one in Atlanta and one in Raleigh. Glass market prices decreased across the board for all three cullet categories; flint, amber, and green.

Markets for green glass in this region continue to be weak with no green bottle manufacturer nearby. Limited green cullet can be mixed to make amber bottles but this is dependent on a consistent batching process. Some communities are paying processors to take green glass and others have dropped green glass collections as a result.

Recovery rates seem to be stable, if not improving, due primarily to color sorting equipment processors now use to handle mixed color cullet. Recovery rates seem to be improving due to the location of major breweries (Anheuser-Busch, Coors, and Miller) in the Southeast. Glass processors do continue on a limited basis to accept this "three-mix" material.

2003 Forecast

The market looks good for recycled glass cullet because the color separation technology used by glass processors to provide a market for mixed color glass, which is turned into a raw material called cullet. There continues to be a demand for a clean, consistent color-separated cullet.

Co-mingled glass and plastic containers are being processed at a facility in North Carolina, which may result in improved efficiencies and add further stability to glass markets for South Carolina.

RMDAC Action

RMDAC should continue to support programs that increase the overall recovery rate of recyclables in South Carolina. Communities should be encouraged to increase glass recovery efforts, particularly with the ability to move mixed color cullet.

PAPER

2002 Summary

The paper market experienced a roller coaster ride with fluctuating prices throughout the course of the year due to large export demand and an early increase in consumption by domestic mills. The old corrugated cardboard (OCC) market started the year at \$40 per ton, dropped to \$35 by March before rebounding in late spring to \$90 per ton and up to a year high of \$130 per ton in July. However steady decreases throughout the fall and end of the year leave OCC prices at \$40-45. Newsprint had a more stable year, starting at \$40 per ton, rising to \$80 per ton and finishing the year around \$70 per ton. High grades have remained fairly stable throughout 2002, averaging about \$130 per ton. The most surprising grade for 2002 has been mixed paper, which has remained around \$50 per ton all year with a very steady market demand. As more mills look for fiber substitution, mixed paper should continue to stay high in demand in both domestic and export markets.

2003 Forecast

For OCC, prices should remain in the \$40-50 range unless severe weather conditions come into play. The Asian market continues to be the leader in the export movement and will continue to depend on the U.S. market as its major supply chain. Newsprint will continue to see more drops in 2003, as producers are unable to pass along price increases to their finished product.

Future Trends

During the coming year, there will continue to be strong growth in export demand from the East Coast as the West Coast sources are meeting export demand and little growth is anticipated. China will continue to look to the U.S. to fill its growth needs in all grades and watch for India to emerge as a player in the market place as well.

On the domestic side, look for mergers to continue as there is still an abundance of over – capacity in the production area, thus resulting in downtime and prices below \$60 per ton on the OCC and Newsprint markets.

RMDAC Action

RMDAC will continue to work closely with DHEC and the Carolina Recycling Association to increase collection of all grades and to develop new and improved markets.

PLASTICS

2002 Summary

Based on the most recent numbers as reported by the American Plastics Council (APC), plastic bottle recycling increased 80 million pounds in 2001. Total plastic recycled reached an all-time high of 1.591 billion pounds. Markets for post-consumer flake and resins are primarily used in fiber, sheeting, strapping, bottle and packaging, pipe and lumber composite products. PET and HDPE continued to lead plastic bottle recovery programs, representing 53 percent and 47 percent of plastic bottle recovery, respectively.

The State of South Carolina reported 5,243 tons of post-consumer plastics recycled in 2002 increasing 429 tons from 2001 or an 8.9 percent increase for the year.

PET Summary

The amount of post consumer PET bottles recycled during 2001 increased to 834 million pounds, according to APC. The 2001 figure represents a 76 million pound increase over 2000 figures. The overall recycling rate for PET bottles increased slightly from 22.0 percent in 2000 to 22.1 percent in calendar year 2001. According to National Association for PET Container Resources (NAPCOR) figures, 596 million pounds were purchased by U.S. reclaimers, 234 million pounds by export markets, and 4 million pounds by composite applications (other). The export market is the highest purchase volume ever recorded with increases both to Canada and China. The U.S. domestic producers reduced buying at the end of 2001 due to high inventories. The U.S. producers also purchased 70 million pounds of imported bottles from Canada, Mexico, and Europe, as well as purchasing alternative feedstocks (i.e. strapping, film, fiber waste, chip and sheet.)

The national 2002 level of recycling for PET is not available as of this writing. The year of 2001 did see increased activity in bottle-to-bottle recycling markets while fiber markets remained sluggish.

In South Carolina, PET recycling increased 6.6 percent or 96 tons from 1,448 tons in 2001 to 1,544 tons in 2002. The significant increase is due largely to increased efforts to educate the public on recycling through the Plastics Partnership between DHEC and the recycling industry.

2003 PET Forecast

Soft end markets for staple fiber processors have continued due to export competition. Export markets for post-consumer bottles have been erratic during the year. In the latter part of the year, a dock workers' lock-out on the West Coast further complicated export sales. Bottle-to-bottle recycling growth has continued to increase in volume as another new application for recycling.

HDPE Summary

According to the APC, 750 million pounds of post consumer HDPE plastic bottles were recycled during 2001 increasing 5.0 million pounds over 2000 levels. The HDPE recycling rate increased from 23 percent to 23.2 percent in 2001. The increase was primarily in pigmented bottles. Demand for post consumer pigmented HDPE (e.g., detergent bottles) was strong during calendar year 2001 with more than 335 million pounds recycled, an increase of 5 million pounds over the previous year. The recycling rate for HDPE pigmented bottles increased to 19.3 percent for 2001, up from 19.0 percent in 2000.

In South Carolina, HDPE recycling increased 86.6 percent or 1,223 tons from 1,412 tons in 2001 to 2,635 tons in 2002. This increase is largely due to efforts to educate the public on recycling through the Plastics Partnership between DHEC and the recycling industry.

2003 HDPE Forecast

The national 2002 level of recycling is not available for HDPE as of this writing. HDPE recycle markets have seen strong growth in 2002 due to curtailment of virgin capacity tightening the overall market in both virgin and post consumer. Domestic processors have taken market share from export with aggressive pricing the latter part of the year. During the latter part of the year, the export activity was also disrupted by the West Coast dockworkers' lock-out.

Future Trends

Growth beyond the current business slowdown is anticipated as new recycled product applications come on line and recycled content in bottles expand. Increasing collection of PET and HDPE bottles remains the primary concern to support this growth. Consumer education and recycling promotions will be needed to further increase collection rates of single serve containers consumed away from the home and to increase public interest in recycling. Additionally, the recycling industry must continue to work with the packaging industry on the recyclability of new bottle variants to address barrier and color issues impacting the quality of recycled products.

RMDAC Action

1. Continue to support and encourage the Plastic Partnership and DHEC Recycle Guys campaign.
2. Continue educational efforts for collection of PET and HDPE with an emphasis on custom and single serve containers.
3. Monitor the establishment of "All Plastic Bottle" programs in South Carolina.
4. No new materials should be added at this time.

FERROUS METAL

2002 Summary

2002 had to be better than 2001 for the ferrous metal industry, and fortunately it was. The bankruptcies and closures that marred the prior year went away or at least returned to “normal” levels. The industry, however, was only able to reach a sustainable level, requiring further improvement to restore full strength.

Markets improved rapidly early in 2002 when President Bush placed tariffs on foreign steel imports under section 201 of the Trade Act. The flow of steel from overseas came to a halt on certain grades and domestic steel mills reaped the benefits. In particular, mills producing flat rolled (sheet) products saw their order books fill quickly and their operating rates climb above 90 percent. Capacity shifted from foreign production to domestic production and the entire industry saw higher prices from scrap metal to finished goods.

While this relief solved the short-term need for industry survival, it did little to address the long-term issue of global overcapacity in the steel sector. Some mills that might have otherwise closed continued to reorganize from Chapter 11. The year did see some consolidation in the industry. Nucor Steel (Charlotte, NC) became the country’s largest steel producer with its acquisitions of two bankrupt mills in Alabama and three others. Ameristeel (Tampa, FL) added a fifth mill in the southeast with its acquisition of a facility outside of Atlanta, and then subsequently merged with CoSteel and their northern locations to form another one of the largest producers in the United States.

South Carolina’s capacity to process its own post consumer recyclables, such as automobiles and white goods, was greatly increased in 2002. This was a result of Carolinas Recycling Group, LLC installing the largest ferrous shredder in the state at its Lyman facility.

2003 Forecast

2003 will begin without the momentum that carried the industry for most of the year. Demand is softer as steel consumers have started to anticipate lower prices, and continued exemptions on the steel tariffs have weakened the impact of earlier trade restrictions. The recovery process has stalled and the industry is looking for a signal from the U.S. economy. Obviously, a stronger economy will enhance the need for steel. The forecast does appear favorable and optimism remains high that better times lie ahead. Barring another disaster, the economy should return to a period of growth in 2003 and the ferrous metal industry seems poised to be an integral part of an economic recovery.

Future Trends

The industry will likely continue to see consolidation in the future. Mergers and acquisition seem to be one of the least painful roads to reduce total capacity. There is so much overcapacity that the entire domestic industry could disappear and there would still be enough steel production to meet demand. EAF (electric arc furnace) mills that use scrap metal for raw material will grow at the expense of older BOF (basic oxygen furnace) mills that use a combination of ore and scrap. Scrap metal will go through various trading cycles like any other commodity and prices will fluctuate up and down.

RMDAC Action

The RMDAC will continue to promote and encourage recycling activities that will increase the recovery of scrap metal. Good markets are available in the state through its many scrap processors and their end markets including four steel mills in South Carolina.

NON-FERROUS ALUMINUM

2002 Summary

Prices for recycled aluminum followed primary prices throughout the year. U.S. primary production made modest gains after historic lows in December 2001. Two domestic aluminum smelters were shuttered in 2002 due to market conditions. Transportation markets became increasingly sluggish in 2002, with bankruptcies announced by major airlines and many aircraft orders suspended until 2005. Aluminum scrap exports rose 10.4 percent over 2001, while imports fell by 5.1 percent.

The table below illustrates average market prices for aluminum in 2002 and the comparative change from 2001.

Cumulative Activity	2002	% change from 2001
Primary aluminum production (Oct)	2.76M metric tons	+10.1
Aluminum beverage can shipments (through Sept)	77.33B cans	0.0
Average UBC transaction price (Oct)	\$0.504 per lb.	+12.5
Total aluminum imports (thru Sept)	7.38M lb.	+12.3
Total aluminum exports (thru Sept)	2.83M lb.	+2.0
Aluminum scrap imports (thru Sept)	0.85M lb.	-5.1
Aluminum scrap exports (thru Sept)	1.03M lb.	+10.4
Aluminum scrap use (thru Sept)	5.63M lb.	-6.5

* Source - [Resource Recycling](#) December 2002 and The Aluminum Association Inc.

2003 Forecast

As with other commodities, domestic aluminum markets trend with typical economic indicators. Innovative uses for aluminum continue to enter the marketplace in the building and transportation sectors. More production restarts cannot be ruled out in the U.S., but most producers are still seeking an improvement in market conditions and remain watchful of power prices. The extended outlook looks promising for aluminum, as several new aluminum smelters are in the design stages worldwide.

Global aluminum smelter output is expected to jump 5.9 percent in 2003, underpinned by strong growth in Asian production, with China accounting for almost half the projected rise. However, China is unlikely to flood the global market despite concerns by some industry analysts and commentators, due to ample room for growth in domestic demand. Per-capita consumption of aluminum in China is about 2 kg compared to 35 kg in the U.S.

Future Trends

The energy value that can be reclaimed through recycling continues to make aluminum one of the most attractive and profitable materials for recycling. Long term there will be global pressure on the price of aluminum which will likely drive prices down 3-5 percent in real dollars for the next 5-10 years. As with any commodity, trading is now a global business. Any unexpected changes in production requirements domestically, the worldwide value of the dollar, or significant shifts in the export market, will affect pricing.

RMDAC Action

With an established recycling infrastructure in place (both private and municipal), the Council should continue to educate and encourage local governments, private citizens, and industry to recover more aluminum and other non-ferrous metals.

USED OIL

2002 Summary

A record amount of oil and oil filters were recycled last year by do-it-yourself oil changers (DIYers) in South Carolina, according to figures compiled by the S.C. Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling (Office).

DIYers recycled 1,147,500 gallons of used oil in 2001, the 11th consecutive year a record amount was collected and the third straight year more than 1 million gallons were collected. Overall, more than 7.9 million gallons have been collected since used oil recycling efforts began in South Carolina in 1990.

In fiscal year (FY) 2001, DIYers also recycled over 245 tons of used oil filters - a decrease from the previous year when almost 267 tons of used oil filters were recycled. While there was a decline in the number of filters recycled, this number reflects a significant environmental protection program that is often ignored or under appreciated considering that each filter may contain from four ounces to one quart of oil if not properly drained. One possible reason for this decrease is that some counties may be marketing used oil filters with their white goods and/or other metals. With this being the case, not all used oil filters that are being recycled are being counted directly. Some may be included in the numbers for white goods and/or metals where there was more than a 35,735 ton increase in recycling from FY 2000 to FY 2001.

Additionally, DIYers recycled more than 100 tons of used oil bottles in FY 2001. This is a 10-ton decrease from last year. One possible reason for this decrease is that some counties are collecting and marketing used oil bottles with other pigmented HDPE plastic. As a result, a portion of the used oil bottles that are being recycled are being counted in the HDPE plastic rather than the used oil bottle numbers. The total tons of HDPE plastic recycled increased from 1,146.44 tons in FY 2000 to 1,411.77 tons in FY 2001 – an increase of over 265 tons. In addition, the City of North Augusta has stopped processing oil bottles because of operational issues.

Used oil recycling figures provided by Santee Cooper in its Give Oil For Energy Recovery (GOFER) program continue to improve and probably will exceed the amount from 2001. Through October 2002, 806,827 gallons of used oil were collected compared to 759,622 gallons of used oil through October 2001.

Due to the unique problems of recycling used oil filters, the Office continues to work with vendors – scrap metal yards and steel mills – that accept filters. Ongoing negotiations with vendors to ensure continuing markets are an integral aspect of the used oil program.

In FY 1998, the Office provided grant funding to Lexington County to purchase equipment to process used oil filters by crushing them into cubes. As part of the pilot project, Lexington County serves as a host county and accepts filters from other counties, the City of Columbia, Fort Jackson and the SC Department of Transportation. The Office recently conducted a cost analysis of the pilot program and determined that considering initial equipment costs and ongoing maintenance costs, the program resulted in a substantial cost savings compared to the readily available alternative.

2003 Forecast

The amount of used oil, bottles and filters collected for recycling should continue to grow in 2003. The priorities of the Office regarding its used oil recycling program are:

- To continue to collect clean oil bottles. Most counties are using oil drain racks to drain the bottles and make them easier to process. Once drained the oil bottles can be mixed with other HDPE plastics. This makes it easier to market the used oil bottles. We will continue to encourage all counties to use the oil drain racks.
- To add farmer oil collection tanks, one per county, where needed. Farmer oil tanks are now at 14 oil collection sites in 11 counties (Fairfield, Georgetown, Greenville, Greenwood, Hampton, Lee, Newberry, Oconee, Pickens, Sumter and Williamsburg). Ten more counties will be setting up tanks in FY 2003. Each of the tanks holds at least 550 gallons of used oil and is fitted with a pump and hose to make it easier for farmers to recycle up to 55 gallons of used oil at one time.
- To continue to expand the oil/gasoline mixture collection program by adding collection tanks where needed. There are currently 16 oil/gasoline mixture sites in 14 counties (Anderson, Charleston, Cherokee, Dorchester, Fairfield, Georgetown, Greenville, Hampton, Kershaw, Lexington, Newberry, Oconee, Sumter and Williamsburg).
- To secure and maintain markets or other uses for used oil, bottles and filters.

Future Trends

The Office will continue to provide grant funding to local governments to set up and maintain used oil recycling programs. The Office also will continue its statewide awareness campaign on used oil recycling, including the national award winning "Recycle Guys" public service announcements. In addition, the "Green Driver Project" for high school driver education classes will continue.

RMDAC Action

The Recycling Market Development Advisory Council should continue its work securing markets, promoting and supporting the state's used oil recycling program.

TIRES

2002 Summary

According to the Rubber Manufacturers Association, the national recycling rate for worn-out tires has tripled since 1990, thus reducing or eliminating the huge piles of scrap tires that once existed throughout the nation. In 1990, only 25 percent of scrap tires were reused but today that number is closer to 78 percent. Among the range of uses for recycled tires are chips used in septic tank drain field applications, rubberized asphalt, tire-derived fuel and various civil engineering projects.

Based on a telephone survey of scrap tire facilities and processors conducted by RMDAC staff, nearly 7 million South Carolina scrap tires were recycled into a variety of products in 2002. This represents a decrease from 2000 when 8 million scrap tires were recovered for recycling. A portion of this number in 2000, however, was attributed the Ford and Firestone recall. The table below provides a comparison of the 2000 and 2002 tire processor surveys.

	2000	2002
SC Tires Processed	8 million	6.9 million
Markets:		
Drain Field, Septic, Leachate	52%	42%
Tire Derived Fuel	34%	35%
Crumb Rubber	4%	14%
Civil Engineering	9%	1%
Landfilled	1%	8%

Tire Derived Fuel (TDF) market demand is consistent compared to the previous survey with 35 percent of scrap tires being processed for fuel. These figures support the national trend toward greater usage of TDF to reduce fuel costs, especially in cement kilns and pulp and paper mills. Because TDF commands a higher price than tire chips for drainage applications (\$30 per ton versus \$17 per ton) the increased market for TDF is favorable to scrap tire processors, benefiting their financial viability.

Demand for processed tires as drainage media dropped from 52 percent in 2000 to 42 percent in 2002, while crumb rubber production increased from four percent to 14 percent during that same period. This represents a positive trend for tire recycling in S.C. since crumb rubber is a higher value product.

Also noteworthy in 2002, a new recycling business start-up in Clinton is using crumb rubber to produce a rubberized roof under-layment product.

2003 Forecast

Markets for products derived from scrap tires are expected to remain strong in 2003, especially if the trend for increased use of TDF continues as expected. With the continued growth of research and production projects by the Clemson Asphalt Recovery Technology Service (ARTS) Center, there will continue to be increased demand for processed crumb rubber. The addition of the Recovery Technologies Group of S.C., located in the former Santee River Rubber Company plant in Berkeley County, should provide needed material once its crumb rubber operations begin production in early 2003.

Future Trends

Market demand for processed scrap tires should remain stable in the near future. The market for tire chips as drainage media may give way to higher price materials such as TDF and crumb rubber. Crumb rubber production and demand should continue to grow in South Carolina.

Local government and tire retailer recovery programs are supported by the State Waste Tire Fund that is generated by the \$2 fee charged to consumers on new tire purchases. These subsidized programs insure that scrap tires are recovered efficiently and economically to supply the recycling market demand in this state. Recent raids on this trust fund have been used to balance budget deficits in other programs. Further eroding of these funds could jeopardize the health of the tire recycling economy that exists today.

RMDAC Action

The Council will continue to encourage the use of crumb rubber in asphalt rubber paving and other added value applications for recycling scrap tires in South Carolina.

APPENDICES

APPENDIX A

South Carolina Recycling Market Development Advisory Council

APPOINTEES

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United Resource Recovery

Clarence H. Hermann
Michelin Tire Corporation

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Anderson County

Kay Clamp
SC Petroleum Council

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ALCOA

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Sonoco Products Company - Paper Division

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Master of Environmental Studies Program
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Carolinas Recycling Group, LLC

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Allied Waste Systems

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STAFF

Ted Campbell
Director

Karen Owens
Project Manager

REPRESENTING

Recycling Industry
Chairman, RMDAC

Tire Industry
Vice-Chairman, RMDAC

County Government

Petroleum Industry

Aluminum Industry

Plastics Industry

Municipalities

South Carolina Department Of Commerce

Paper Industry

Higher Education Research

Scrap Metal Industry

General Public

Solid Waste Collection and Disposal Industry

Glass Industry

South Carolina Department of Commerce
RMDAC

South Carolina Department of Commerce
RMDAC

APPENDIX B

FOR IMMEDIATE RELEASE

APRIL 29, 2002

Tavey McDaniel, Director, 919-545-9050
Noel Lyons, Policy Committee Chair, (910) 532-2539 x5

Carolina Recycling Association Supports Advanced Recycling Fee on Electronics in North and South Carolina

As increasing amounts of electronic equipment become outdated and destined for the landfill, states across the US are considering recycling and reuse options for this growing waste stream. Groups in California, Idaho, Minnesota, Massachusetts, Nebraska and here in the Carolinas are seeking support or introducing legislation for electronics recycling.

The Carolina Recycling Association recognizes the magnitude of the growing e-waste problem in the Carolinas and has come out in favor of the proposed statewide electronics recycling programs and the establishment of an advance recovery fee for this material.

CRA Electronics Recycling Resolution

Whereas, a cleaner environment and pollution minimization are vital to the States of North Carolina and South Carolina for the health, best interests, and future of its citizens; and

Whereas, discarded electronic equipment currently disposed of in landfills contains a variety of toxic materials/pollutants including one or more of the following: lead, mercury, selenium, cadmium, arsenic, zinc, brominated flame retardants, and, in older equipment, polychlorinated biphenyls (PCBs); and

Whereas, old cathode ray tubes (CRT's) found in computer monitors and televisions are at least 20% lead oxide by weight, with the average CRT containing about 4 pounds of lead; and

Whereas, used electronic equipment contains plastics and precious metals including copper, steel, aluminum which should be recycled; and

Whereas, in North Carolina and South Carolina it is anticipated that a significant volume of electronic equipment will be available for disposal, reuse or recycling each year, in addition to an unknown quantity of stored material; and

Whereas, the continuing technological advances fuel the rapid turnover of computers, televisions, cellular phones and other electronics; and

Whereas, the disposal of hazardous cathode ray tubes by commercial generators in municipal solid waste landfills is prohibited by the Resource Conservation and Recovery Act (RCRA); and

Whereas, a comprehensive statewide program to collect and recycle old electronics is essential to insuring that recyclable materials are retrieved and that pollutants are not released into the environment; and

Whereas recycling the useable materials from discarded electronic equipment is consistent with the mission of the Carolinas Recycling Association;

Therefore be it resolved that the Carolinas Recycling Association supports a legislative mandate that would establish a statewide electronic equipment recycling program in North Carolina and South Carolina, supported by revenues generated by an Advance Recycling Fee.

NATIONAL ELECTRONICS PRODUCT STEWARDSHIP INITIATIVE

FOR IMMEDIATE RELEASE
March 19, 2002

Contact: Gary Davis
865-974-4251

NATIONAL ELECTRONICS PRODUCT STEWARDSHIP DIALOGUE ACHIEVES MILESTONE: STAKEHOLDERS AGREE ON FINANCING APPROACH FOR MANAGEMENT OF USED ELECTRONICS

WASHINGTON, D.C. – Representatives from electronics manufacturers, government agencies, environmental groups, and others have achieved a major milestone in the development of a joint nationwide plan for managing used electronics. In their fourth meeting on March 11-12 in Washington, D.C., all stakeholders in the National Electronics Product Stewardship Initiative (NEPSI) agreed to work toward the establishment of a financing system that will include the costs of managing used electronic products in the overall purchase price of new electronic products. [Text of Agreement attached].

The agreement commits the stakeholders to work on the development of a “front-end financed system” during the remaining work of the NEPSI Dialogue and to develop an agreed action plan for establishing this system that includes federal legislation needed to facilitate the implementation of the system. The action plan will also include steps that can be taken during the period before the “front-end” system is in place nationally that will improve existing systems for managing used electronics and prepare for the new financing system.

The NEPSI participants identified several challenging issues remaining to be resolved, including the timeframe for implementing the front-end financed system, how to make the system convenient for consumers, whether it can provide incentives for product design, and how the costs and responsibilities for collection, reuse, and recycling will be shared among producers, retailers, consumers, and governments. The group also discussed the serious issue of the export of used electronics from the U.S. for dangerous backyard recycling by workers in Asia that was highlighted by a recent report and documentary video entitled “Exporting Harm.” They agreed that the NEPSI Dialogue will make recommendations on how to address this problem in the development of the new nationwide system for used electronics management.

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The National Electronics Product Stewardship Initiative, organized in April of last year, consists of 45 participants, split evenly among industry, government, and a third group that includes environmental groups, recyclers, and retailers. The NEPSI group's main goal for the dialogue is "the development of a system, which includes a viable financing mechanism, to maximize the collection, reuse, and recycling of used electronics, while considering appropriate incentives to design products that facilitate source reduction, reuse and recycling; reduce toxicity; and increase recycled content." This "product stewardship" initiative involves a sharing of responsibility for the reuse and recycling of electronics by those who produce, sell, and use these products.

Gary Davis, coordinator of the NEPSI process, said, "All the stakeholders have worked incredibly hard to get to this point. Achieving an agreement on the financing system reestablished their commitment to the process."

Heather Bowman, Director of Environmental Affairs for the Electronic Industries Alliance, commented that, "We are extremely encouraged by the progress we have made in the NEPSI dialogue. By committing to a shared-responsibility model and now exploring front-end financing possibilities, the NEPSI dialogue has really made great strides in working together to develop the most cost-effective, efficient, and convenient national recycling program. We look forward to continuing the progress we have made over the last several months."

Ted Smith of the Silicon Valley Toxics Coalition added, "After a year of discussions, this is a good first step forward. It is important that industry has now agreed that we need to develop a 'front-end' financing solution to the e-waste crisis and that it will take legislation to accomplish this. But there are many difficult issues that remain and now we need to buckle down to address them if we are to meet our goal of developing a truly effective system for life cycle responsibility for electronic products."

Scott Cassel, of the Product Stewardship Institute, who is coordinating state and local government input in NEPSI, stated, "This agreement represents a major step toward providing relief from the financial burden imposed on state and local governments that must now manage used electronic products."

The NEPSI group has agreed to meet three more times over the next six months, while rotating meetings around the country to acknowledge the unique regional circumstances faced by state and local agencies. Participants hope that this dialogue will result in a voluntary national

agreement by September. The next formal meeting is scheduled for June in St. Paul, Minnesota.

For additional information contact any of the following NEPSI Core Group members:

INDUSTRY

Heather Bowman, Electronic Industries Alliance (703) 907-7582

GOVERNMENT

Scott Cassel, Product Stewardship Institute (978) 934-4855

Maureen Hickman, Minnesota Office of Environmental Assistance (651) 215-0271

Sego Jackson, Snohomish County, Washington (425) 388-6490

Clare Lindsay, U.S. Environmental Protection Agency (703) 308- 7266

ENVIRONMENTAL ORGANIZATIONS

Ted Smith, Silicon Valley Toxics Coalition (408) 287-6707

Text of Agreement Attached.

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**NATIONAL ELECTRONICS PRODUCT STEWARDSHIP INITIATIVE
AGREEMENT FOR FUTURE WORK ON NEPSI FINANCE SYSTEM
3/12/02**

Goal:

The goal of the NEPSI Dialogue is the development of a system, which includes a viable financing mechanism, to maximize the collection, reuse, and recycling of used electronics, while considering appropriate incentives to design products that facilitate source reduction, reuse and recycling, reduce toxicity, and increase recycled content.

In order to achieve this goal:

Agreement:

1. We agree to work toward the development of a front-end financed system that will strive to meet the goal of the NEPSI process. This system may be managed by a third-party organization. Although other systems may be favored by some stakeholders, we will focus our efforts in the remainder of the NEPSI process to work out the issues associated with this type of system.
2. We agree to work together as part of the NEPSI process to develop draft federal legislation or a consensus about the elements thereof by the end of the September NEPSI meeting that will facilitate the operation of a national front-end financed system.

Interim Steps:

3. We will establish through NEPSI an action plan to build infrastructure and support for the future front-end financed system during the interim period before the front-end financed system is fully functional. We also agree that the action plan should include actions to make existing systems more effective during this interim period.
4. We agree that we will need to develop an action plan (in addition to the consensus draft legislation) that captures and memorializes in some way the points we have agreed upon in NEPSI by the end of the September NEPSI meeting. This action plan should outline the steps that we agree to take after the NEPSI process to prepare for and implement the front-end financed system and gain passage of the consensus legislation.
5. We agree that a front-end financed system cannot be implemented immediately on a nationwide basis. In the interim existing systems will need to be optimized and used to fund the collection, reuse, and recycling of electronic products. We will identify a time frame by which we anticipate a front-end system will be functional.

APPENDIX D

FOR IMMEDIATE RELEASE:

Contact: Helen Munnerlyn
(803) 737-0481

Date: January 10, 2003

Business Recycling Assistance Program helps SC businesses

COLUMBIA, SC – During its first year, the Business Recycling Assistance Program (B-RAP) assisted 70 South Carolina companies reduce the amount of waste generated, recycle more materials, conserve energy and natural resources, and lower solid waste disposal costs.

B-RAP is a collaborative effort between the S.C. Department of Commerce Recycling Market Advisory Council and the state Department of Health and Environmental Control (DHEC) Office of Solid Waste Reduction and Recycling, and the Center for Waste Minimization.

The program assists businesses by identifying easy-to-implement strategies of waste reduction, recycling, pollution prevention and environmentally preferable purchasing that lessen environmental impact while increasing financial performance.

“With B-RAP, companies can impact their bottom line with waste reduction of up to 30 to 50 percent. It’s a program that is definitely working to benefit all types of businesses and South Carolina,” said Ted Campbell, Recycling Market Development director. “B-RAP shows businesses how to achieve real savings by reducing the amount of waste they generate and pay to dispose through technical assistance.”

The program provided during the year has covered a broad spectrum including consultations with companies to start basic recycling programs to industries with comprehensive environmental management systems with reusable by-products in other manufacturing applications.

Since its start last December, the partnership has consulted with 70 businesses, providing to them at no cost, and on a confidential basis, on-site waste audits, assistance locating markets for recyclables, and educational materials, including “It’s Everybody’s Business: A How-To-Guide for Implementing Waste Reduction Programs.”

One of B-RAP’s first-year success stories was helping Anderson Hardwood Floors in Clinton find an outlet for its scrap flooring. “We were able to donate nearly 20,000 square feet of usable flooring to Habitat for Humanity to use in future building projects,” said Johnny Gates, chief operating officer at Anderson. “We are committed to protecting the environment and are pleased our donation will benefit Habitat’s on-going community building projects.”

The partnership also sponsors the S.C. WasteXchange, a free online material exchange service, and “The Index of Waste Minimization Resources” annual directory.

B-RAP also maintains an informative web site at www.scdhec.net/brap. To learn more about B-RAP and its services, call Karen Owens, Recycling Market Development, (803) 737-0239.

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RECYCLING is WORKING

The U.S. Recycling Economic Information Project

Documenting the economic impact of recycling
and reuse in the United States.

For more information, contact:

Gordon Hui, U.S. Environmental Protection Agency, 703 308-9037

Michael Alexander, National Recycling Coalition, 802 254-3338

RECYCLING IS WORKING IN AMERICA

From the local cities and towns that collect household recyclables to the large scale businesses that manufacture state-of-the-art recycled-content products, recycling is working across America. According to the recently published *U.S. Recycling Economic Information (REI) Study*, recycling offers widespread benefits to the U.S. economy. More specifically, the U.S. recycling and reuse industry supports more than 56,000 recycling establishments that gross over \$236 billion in annual revenues and employ over 1.1 million people with an annual payroll of \$37 billion.

This landmark study—commissioned by the U.S. Environmental Protection Agency (EPA) and a number of states through a cooperative agreement with the National Recycling Coalition (NRC)—satisfies a longstanding need for economic data that measures the important economic contribution of recycling and reuse. This new data also reinforces the well-established environmental benefits of recycling and reuse, such as cutting pollution, conserving natural resources, saving energy, and reducing greenhouse gas emissions.

“This study confirms what many have known for a long time—the recycling industry is a viable business sector with a promising future,” said Thea

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The U.S. Recycling Economic Information Project was commissioned by the U.S. Environmental Protection Agency and a number of states through a cooperative agreement with the National Recycling Coalition in association with R.W. Beck, Inc.



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McManus, Director of EPA's Municipal Solid Waste Division. "It's a win-win venture that creates jobs, turns a nice profit, and helps save the environment all at the same time."

The REI study also measured the broader impacts of recycling and reuse on the economy. Businesses that support the recycling industry, such as accounting firms and office supply companies, indirectly contribute 1.4 million jobs with a payroll of \$52 billion and \$173 billion in receipts to the U.S. economy. Spending by employees of the recycling and reuse industry adds a further economic boost, along the lines of 1.5 million jobs with a payroll of \$41 billion and receipts of \$146 billion.

"The recycling industry is a diverse network of public and private organizations—with significant economic contributions coming from both traditional firms and new innovative market sectors," said Kate Krebs, Acting Executive Director of the NRC. "We also have a positive outlook for the future with the development of exciting new businesses, such as computer demanufacturers, composters, and plastic lumber manufacturers."

The goal of the REI study was to provide a current snapshot of the size of the nation's reuse and recycling industry. This was accomplished through a comprehensive analysis of both existing economic data and reasonable estimates based on targeted surveys of recycling businesses and sophisticated economic modeling. The study measured numerous industry characteristics, including the number of establishments, total jobs, annual payroll, annual receipts, and annual throughput (amount of materials collected and processed).