



SOUTH CAROLINA DEPARTMENT OF COMMERCE



RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL 2017 ANNUAL REPORT





Team South Carolina experienced another remarkable year in economic development in 2017. From the Lowcountry to the Upstate – and everywhere in-between – new and existing industries announced impactful capital investments, bringing jobs and opportunities to every corner of South Carolina. A big component of last year's economic success was the state's sustainable sector – recycling.

From January to December, five recycling firms announced more than \$500 million in capital investment and approximately 200 new jobs in South Carolina. With more than 500 recycling-related companies now calling our state home, this \$13 billion sector has become an important pillar of South Carolina's economy.

Recognizing this, S.C. Commerce's Recycling Market Development Team spent much of the last year promoting the industry's impact and encouraging business participation in recycling initiatives. From Don't Waste Food S.C., a food waste reduction campaign, to Your Bottle Means Jobs, a plastic bottle recycling initiative, collaborative efforts are underway to promote both environmental stewardship and economic growth.

As a leader in manufacturing, we often say that in South Carolina, we're great at making things. With a diverse recycling industry – including five paper recycling manufacturing facilities, 10 plastics reclaimers, three steel recycling mills, one recycled aluminum manufacturer and hundreds of other businesses – it's clear that the Palmetto State also excels at remaking things.

RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL (RMDAC)

RMDAC supports the economic growth of South Carolina's recycling industry through building recycling markets, increasing material recovery and promoting the recycling value chain.



Wes Westbrook,
Chair

BMW/
SC Department of
Commerce



Vic Carpenter

Kershaw County
County Government



Kristen Brown,
Vice Chair

Waste Zero
General Public



Chuck LaGrange

Greater Greenville
Sanitation Commission
Municipalities



Norman Chandler

Republic Services
Solid Waste Industry



Angel Lara

Southeast Recycling
Resources
Scrap Metal Industry



South Carolina
Department of Commerce

Just right for business.



Brad Dutton

FiberQuest
Plastics Industry



Carol James-Gilchrist

Sonoco Recycling
Paper Industry



Esther Murphy

Horry County Solid
Waste Authority
Glass Industry



Bill Laursen

Universal
Environmental
Services
Petroleum Industry



Drew Smith

Michelin North
America
Tire Industry



**Dr. Andrew Spicer
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Darla Moore School
of Business Higher
Education



Tina Huskey

Mumford Industries
Recycling Industry



Chad Prescott

Mid-Carolina Steel
Aluminum Industry

RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL (RMDAC)

Ex Officio Members



Glenn Odom

Wellman Plastics
Recycling Industry



Ronnie Grant

Sonoco
Paper Industry

Emeritus Member



Joseph McMillin

Atlas Organics
Organics

South Carolina Department of Commerce Staff



Chantal Fryer

Recycling Market
Development Director



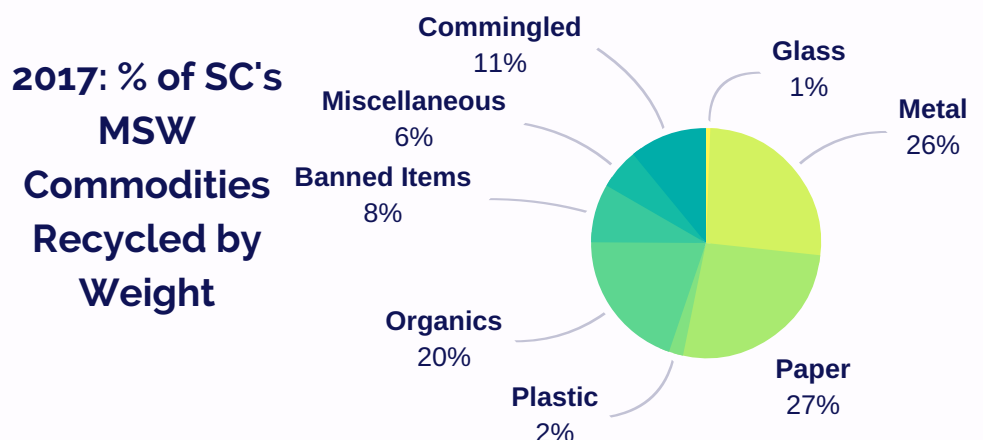
Anna DeLage

Recycling Market
Development Manager

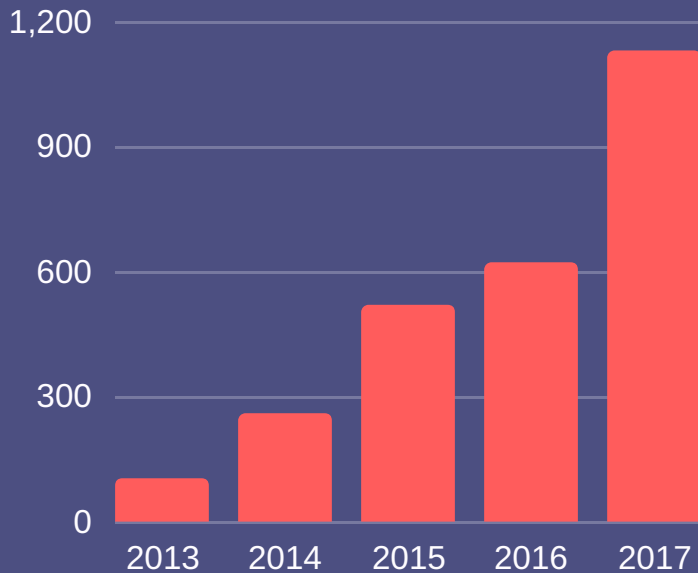
RMDAC Recommendations

- 1) Revisions to initial report: no revisions necessary to the initial report.
- 2) Description and analysis of MSW recycling during previous year. The recycling rate for 2017 is 28.7%.* RMDAC will continue to work with businesses and industry to grow recycling markets and develop strategies to help increase the recovery and recycling of materials.
- 3) Recommendations regarding materials which should be added or deleted from source separation, recovery, recycling programs; and to increase the recovery of recyclable materials. RMDAC will continue to promote recovery, recycling and sustainable material management options for the following to include but not limited to carpet, glass, plastic containers, metals, scrap tires, electronics, textiles, construction and demolition materials, universal wastes that can be recycled/repurposed, and organics.
- 4) Any other recommendations, including tax incentives, to facilitate the development of markets for recovered materials or products in the state. RMDAC should investigate the following mechanisms to spur recycling recovery and industry growth:
 - Pay as You Throw as a mechanism to increase recycling.
 - Encourage business reporting of recycling data.
 - Add recycling to the types of businesses qualifying for job tax credits.
 - Share best management practices for business recycling.
 - Expand state tax incentives as a mechanism to incentive food donation.
 - Develop partnerships to support and increase market-based solutions to recycling.

2017 SC
Recycling
Rate:
28.7%



South Carolina Recycling Industry 5 Year Cumulative Capital Investment (Millions)



SC Recycling By the Numbers 2013-2017

\$1,129M

Capital Investment

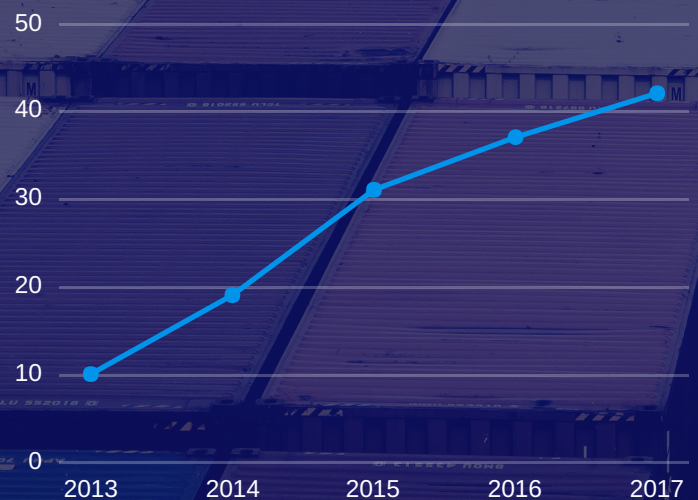
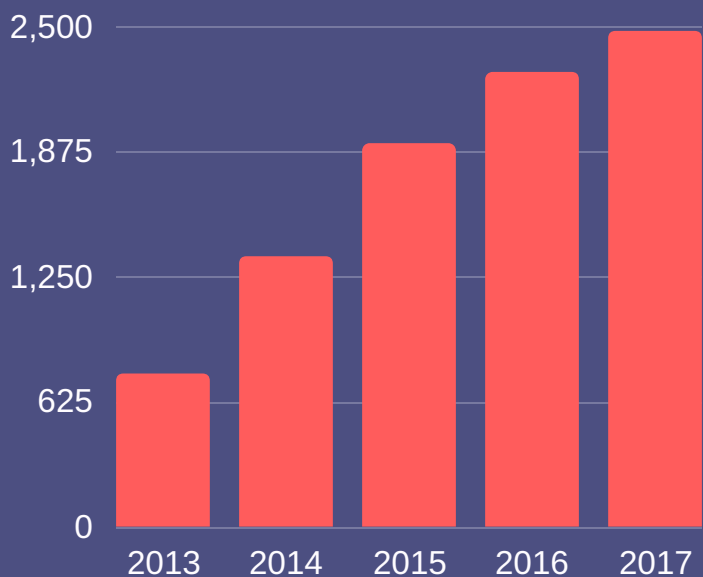
2,477

Job Creation

42

New/Existing
Businesses

South Carolina Recycling Industry 5 Year Cumulative Job Creation



South Carolina Recycling Industry 5 Year Business Investment (Cumulative)

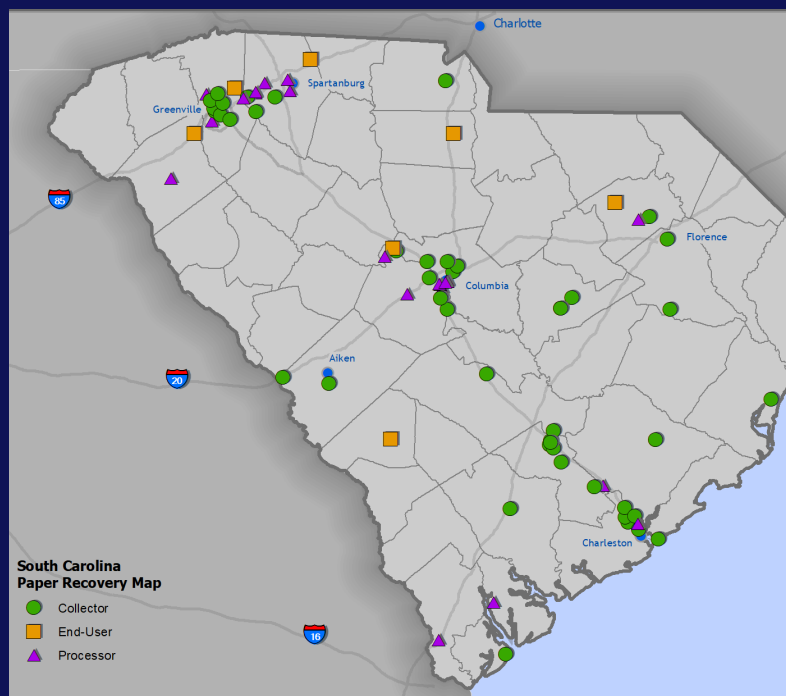
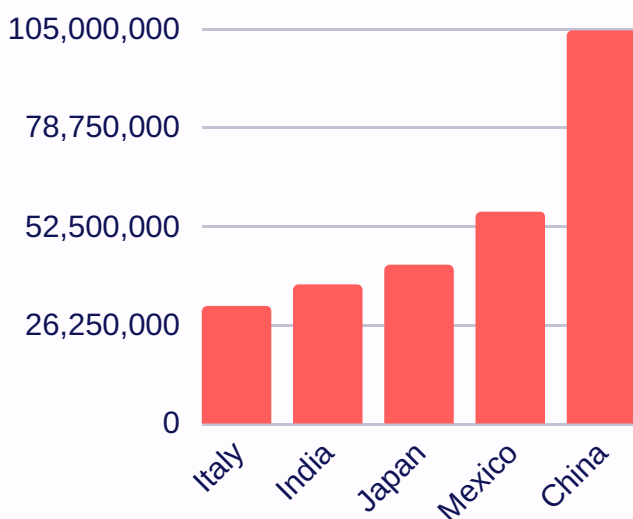
Paper

More than 80 companies exist in the paper recovery value chain that employs approximately 3,000 workers across the state. SC has a comprehensive network of recycling collectors, haulers, shredders, processors and mills for paper related material. These processing mills produce liner board, paperboard, tubes and cores (i.e., paper towel cores), game board and other packaging material for the consumer products industry.

SC's four paper mills use recycled Old Corrugated Cardboard (OCC) to make new linerboard or paperboard and consume 1,261,000 tons of cardboard annually. Sonoco and WestRock-Florence are in the Pee Dee region, and Carotell Paperboard and WestRock-Cowpens (formerly KapStone) are in the Upstate. Orchids Paper is a new tissue mill in Barnwell, SC with 130 employees and uses recycled pre-consumer paper to make tissue.

In July 2017, the Chinese government announced their intent to ban mixed paper, among other recyclables, from entering their country. In addition, they have increased the quality expectation of acceptable fiber recyclables to a maximum of .5% contamination from 1.5% - 2%. China is looking to recover more of its own recycling, increase environmental controls to reduce air pollution, and exported materials from the US and Europe are contaminated, and China's ban has had major repercussions on local markets. In fact, SC's local Materials Recovery Facilities are passing on their processing costs to local governments to process material to meet the new quality expectations for the mixed paper grade which comprises more than 30% of the residential composition of single stream materials.

SC's Top 5 Recycled Paper Export Countries in 2017



Plastics

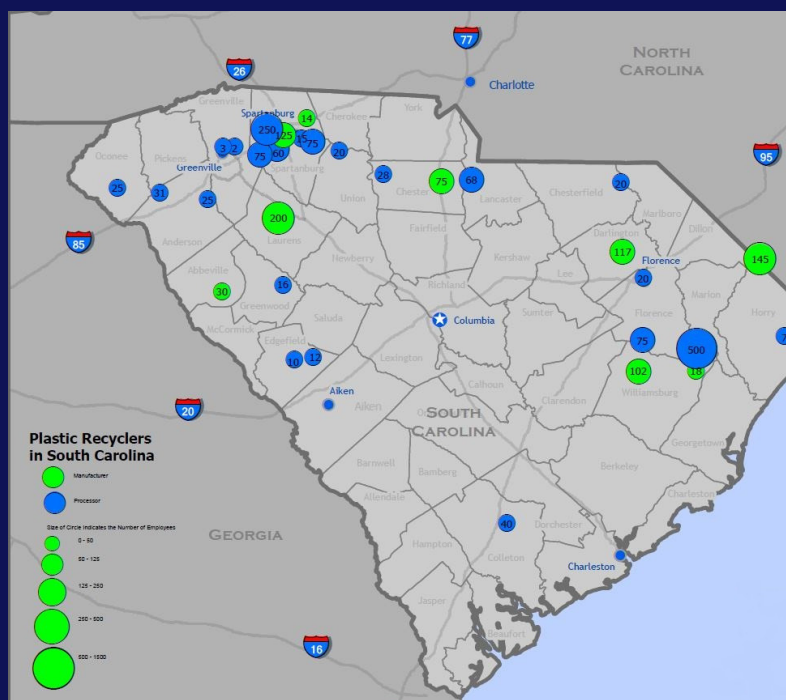
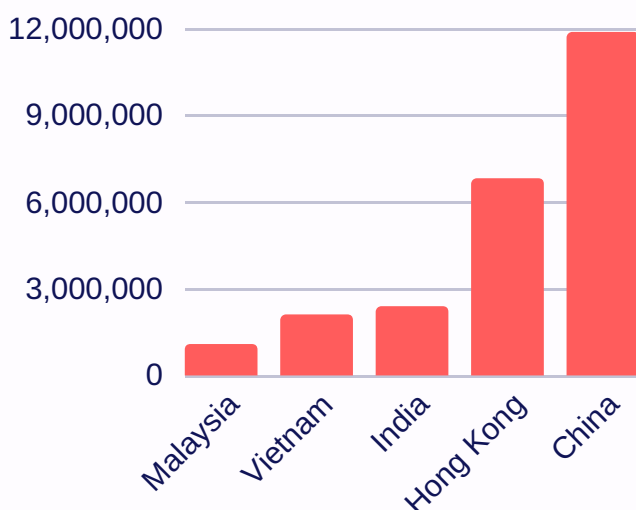
From bottles to car parts and textiles, plastics are everywhere. Companies generate plastic scrap from packaging and manufacturing applications. Luckily, South Carolina has a robust plastic recycling industry with about 100 companies in the value chain who collect and recycle residential, commercial and industrial plastic scrap material. The SC recycling industry's readily available markets employs more than 1,500 people, with the capacity to process more than 500 million pounds of plastic bottles per year.

The simple act of recycling plastic bottles creates well-paying jobs, and companies that have a good supply of recycled bottles will continue to invest and expand their businesses in South Carolina. Companies like Palmetto Synthetics, US Fibers, Sun Fibers and others recycle PET bottles into new products. Sun Fiber is the newest PET recycler to locate in South Carolina. "Sun Fiber continues to produce recycled PET fiber for customers in the furniture, home textile, and automotive industries and therefore has a large demand for R-PET (recycled plastic bottles). We sincerely hope to see a continued and strengthened development of a healthy recycling industry in the Carolinas". -Ya Sun, CEO, Sun Fiber LLC

Textile recyclers handle polyester, nylon and other non-woven materials derived from plastics.. There are 13 textile recyclers in the state, and Leigh Fibers, Martex Fiber, and Bowers fibers are three of the larger employers in this recycling industry sector.

Industrial plastics (some common abbreviations are ABS, PC/ABS, PP, Nylon, HIPS, LLDPE, LDPE, PE, PS) are generated from automotive, distribution, aerospace and other industries. There are 15 industrial plastics recyclers in the state.

SC's Top 5 Recycled Plastic Export Countries in 2017



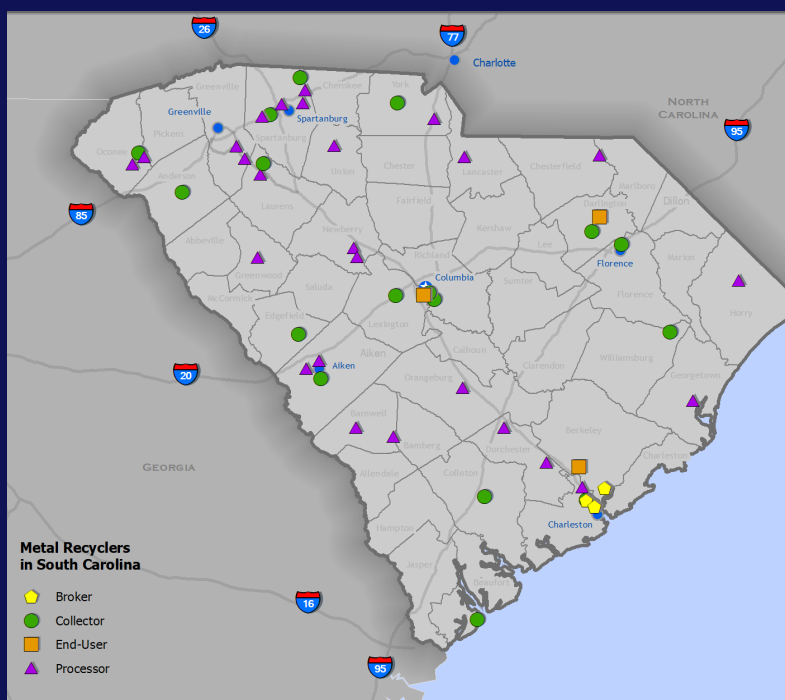
Metals

Commercial and industrial firms can reduce waste collection costs by increasing the volume of metals and other recyclables such as plastics and paper by working with scrap recyclers to divert those materials into the recycling stream. Construction, automotive, metal fabrication, packaging and other industry sectors generate many types of metals such as aluminum, copper, lead, steel, nickel, zinc and brass that can be easily recycled. Businesses can also create revenue by recycling metals with local scrap metal yards collect and process these commodity materials.

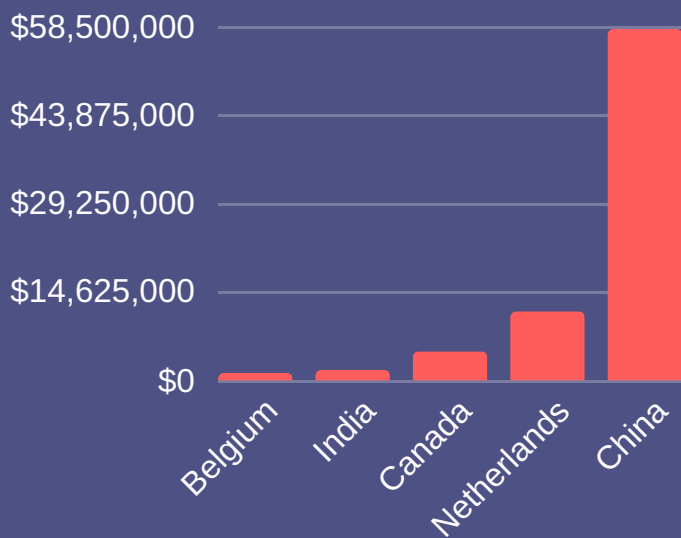
South Carolina has more than 170 companies involved in metal recycling who can haul, process, and manufacture recycled metals for the automotive, construction and building, energy, agriculture, aerospace, tools, and packaging sectors.

South Carolina has three steel mills including two at the Nucor Corporation, located in Darlington and Berkeley Counties, and one at CMC Steel in Lexington. Steel is recycled at these locations to create structural steel building products for the construction industry. Similarly, JW Aluminum, a recycled aluminum mill produces siding, automotive body materials, and flexible packaging.

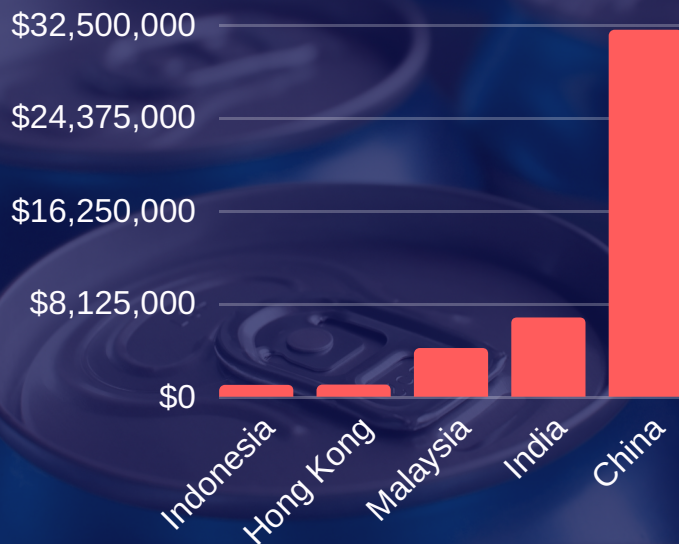
Every time a ton of steel is recycled, 2,500 pounds of iron ore, 1,000 pounds of coal and 40 pounds of limestone are preserved. In South Carolina, the demand for metal processing at the steel and aluminum mills requires 4 million tons of recycled steel and 120,000 tons of recycled aluminum annually. Recycling of aluminum cans saves 95% of the energy required to make the same amount of aluminum from its virgin source. Recycling steel and tin cans saves 74 percent of the energy used to produce them from raw materials. Tin cans contain 99 percent steel.



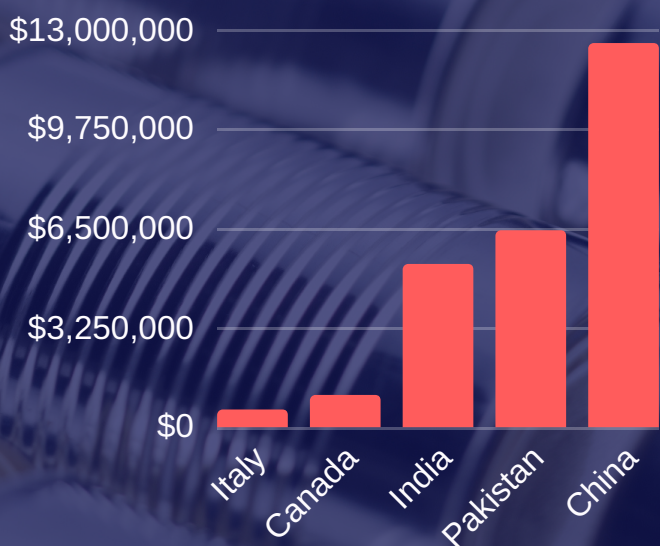
SC's Top 5 Export Countries in 2017 for Recycled Copper



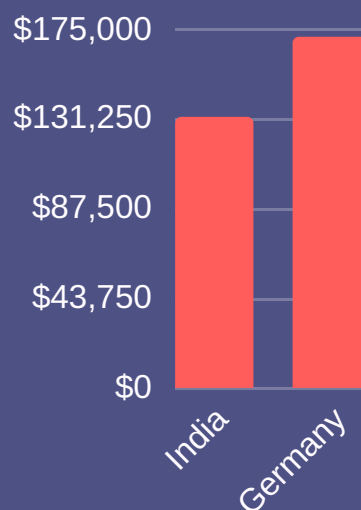
SC's Top 5 Export Countries in 2017 for Recycled Aluminum



SC's Top 5 Export Countries in 2017 for Recycled Ferrous Metals



SC's Top Export Countries in 2017 for Recycled Nickel



Glass

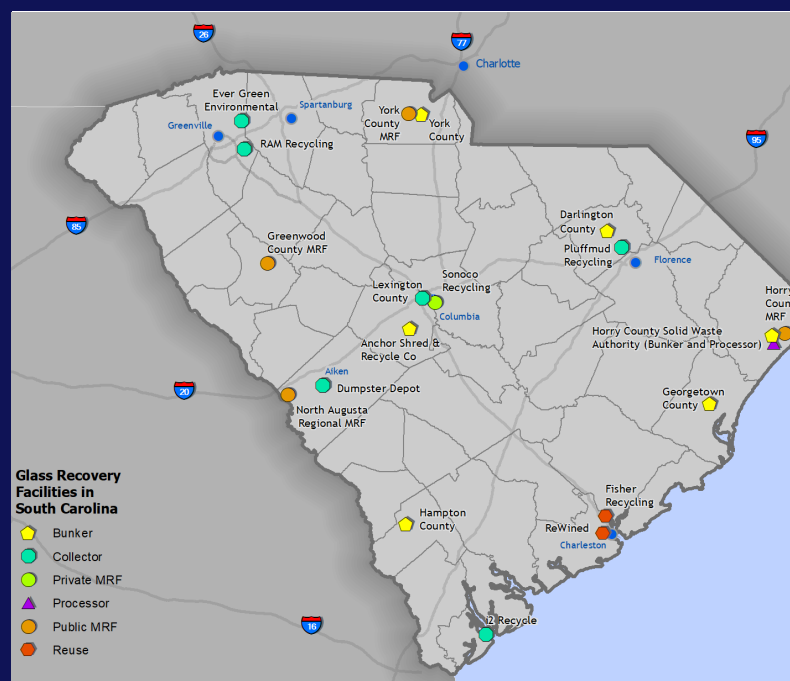
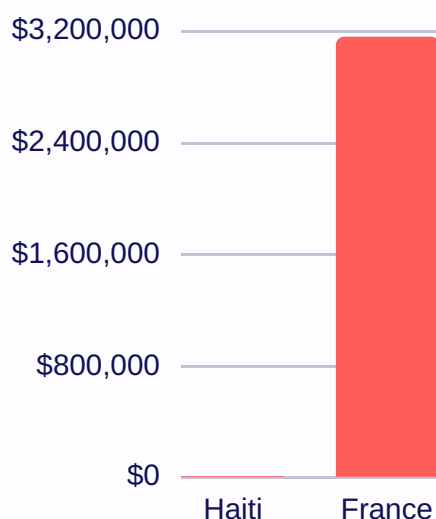
Businesses who generate the most glass bottles are largely restaurants, bars, caterers and other hospitality related entities. These organizations can recycle their glass bottles by working with a commercial recycler who will collect bottles along with other recyclables to local material recovery facilities (MRFs) for processing or sending glass bottles via truckload to glass processors. Residents can use local recycling drop-off centers or curbside collection as available in their area for glass recycling.

Recycled glass is a commodity in SC that has faced market challenges because it contaminates other materials, has low value and high transportation and processing costs. The closest glass processor to South Carolina is Strategic Materials in Wilson, NC and College Park, GA.

Examples of reuse of glass in SC: 1) the Horry County Solid Waste Authority which accepts residential glass and has invested in glass crushing equipment to create a crushed glass product suitable for landscape and roadbed applications. 2) Fisher Recycling in Charleston, SC constructs countertops with recycled glass. Fisher Recycling solely provides commercial collection of glass and collects glass bottles from businesses such as restaurants and bars. 3) ReWined in Charleston, SC crafts the base of repurposed wine bottles from restaurants into candle vessels with a 100% natural soy wax.

South Carolina has several public and private material recovery facilities (MRFs) who process glass. The MRFs accepting glass are Sonoco Recycling in Columbia, Horry County Solid Waste Authority, North Augusta, and Greenwood County.

SC's Exports Countries in 2017 for Recycled Glass



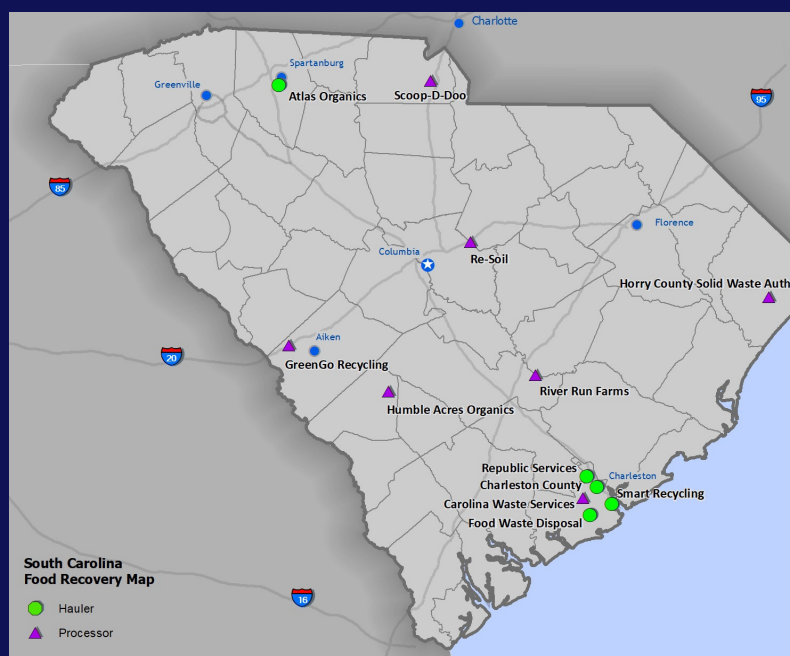
Food

Food waste is the No. 1 item thrown away by Americans accounting for 21.6 percent (38.4 million tons) of the nation's waste in 2014 according to the U.S. Environmental Protection Agency (EPA). Each year 40% of food in the United States never gets eaten. In fact, South Carolina produced an estimated 641,916 tons of food waste in fiscal year (FY) 2016 (July 1, 2015 to June 30, 2016). Food is the single largest contributor to US landfills.

Many companies generate food that is wasted daily. Food manufacturers, hospitals, universities, schools and restaurants are often the biggest generators of food waste. The good news is that businesses in SC have access to four industrial scale food composting facilities in Greenville, Columbia, Myrtle Beach and Charleston, as well as an anaerobic digester in Charlotte, NC. Companies can contract with haulers that collect food waste and take it to compost facilities for processing.

To help prevent food waste, businesses can order just-in-time catered food. Trayless dining is a popular solution, by eliminating a la carte services leads consumers to make more careful choices and reduce over-portioning. Waste tracking and data management can allow businesses to better understand sources of wasted food to reduce cost and change purchasing behavior. Businesses can also donate unspoiled food to local food banks and connect with local food rescue partners.

Food/organic waste recycling is a new market for SC's recycling industry. Food recycling, also known as composting, is a monitored process where food waste and organic matter breaks down to produce a nutrient rich soil amendment that can be applied for use in agricultural, landscaping, home gardening, erosion control and other areas.



Tires

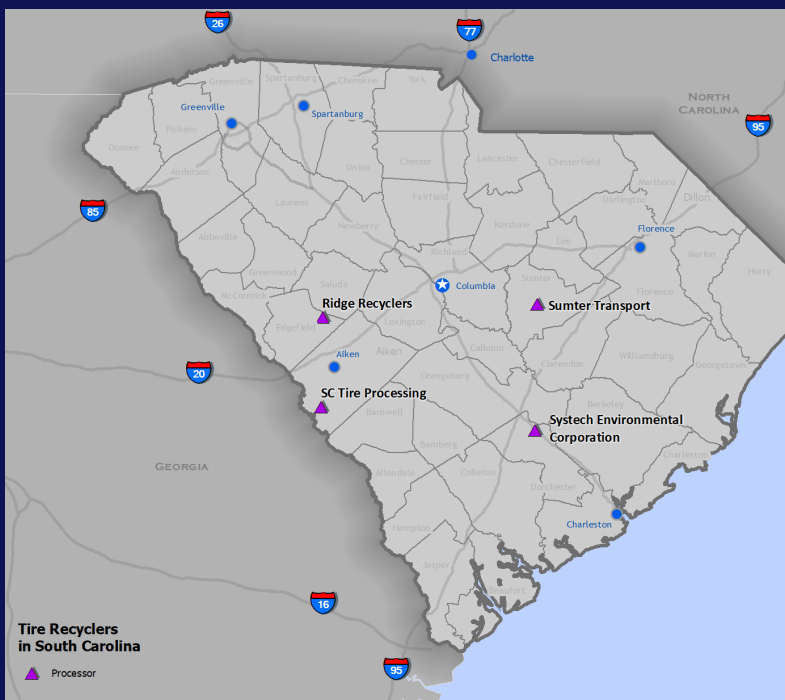
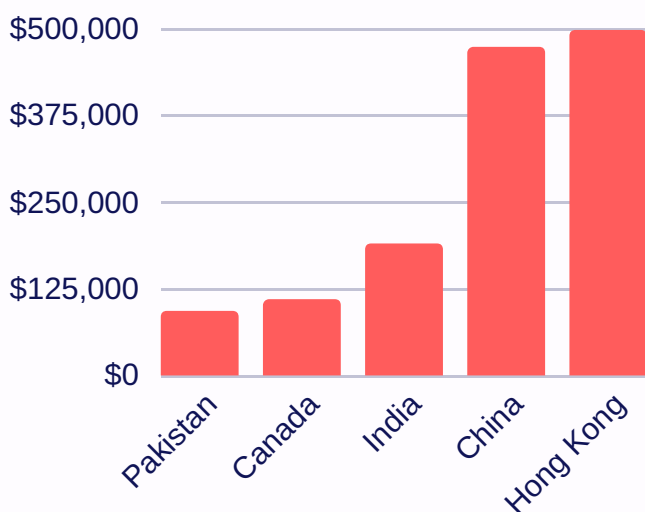
SC's growing tire manufacturing industry generate off-spec production tires for recycling in addition to scrap tires generated by retailers, fleets and residents. South Carolina reaps the benefit by recycling these tires and manages ongoing concerns such as scrap tire piles. South Carolinians generate an estimated 5.02 million waste tires every year. South Carolina's tire recycling industry has about 100 employees involved in the hauling, processing and creation of new products from recycled tires.

Tire Derived Fuel (TDF) is the major commodity produced in South Carolina from recycled tires. Several industrial sites in South Carolina utilize TDF as part of their fuel stream. Tires can also be ground into landscape mulch, playground surfacing, horse tracks and crumb rubber for asphalt. Recycled tires can even be used as bullet traps for ballistic courses, and public works applications for erosion control, speed bumps and traffic signs .

SC's tire processing capacity in 2017 was reduced due to the Viva Recycling facility closing in Moncks Corner and Anderson, SC. This leaves the Upstate and Low Country underserved and ripe for market development in tire recycling. Ridge Recyclers in Johnston, SC and SC Tire Processing in Jackson, SC offer tire recycling capacity in SC. Liberty Tire also has affiliates in NC that offer recycling services in SC.

Whole tires are one of several items that are banned by law from any type of landfill disposal including appliances, electronics, lead-acid batteries, and used motor oil.

SC's Top 5 Recycled Rubber Export Countries in 2017

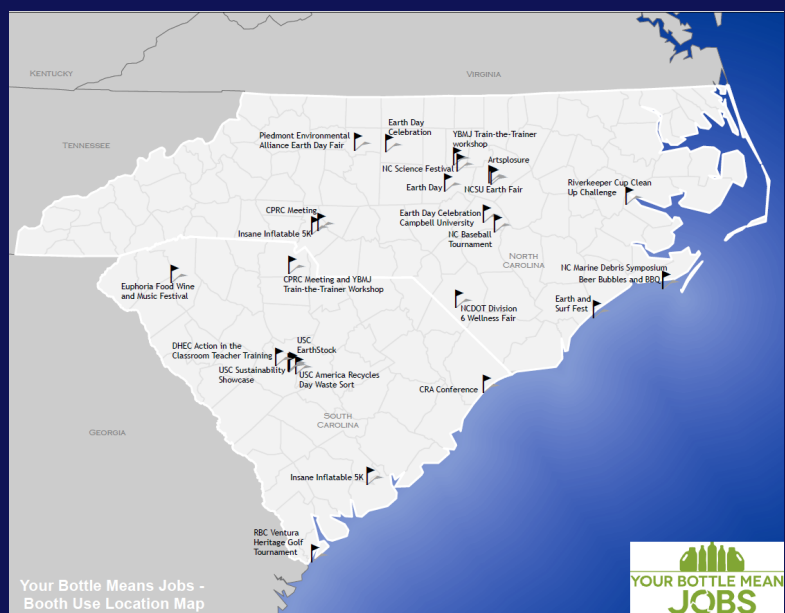


Your Bottle Means Jobs

The Carolinas (NC/SC) plastics recycling industry is growing, about 3,500 people are directly employed in this industry which is great news for the economy. Over 70% of all plastic bottles are thrown away and it is vital that more plastic bottles begin being recycled. Companies right here in the Carolinas CAN'T find enough recycled plastic to run their plants efficiently. That is why staff has been teaming up to get more plastic bottles in the recycling bin.

Staff promoted the YBMJ campaign at nearly 30 events over the past 2 years. In addition to direct consumer-facing events, Your Bottle Means Jobs promotes the recycling message through videos on social media as well as through a full-blown campaign in the Raleigh Durham area. The videos received tens of thousands of views, leading to greater education about recycling's economic impact. One North Carolina Vimeo viewer wrote about the video: "I think it's awesome to recycle, and I enjoyed the videos on how it's done and that it creates jobs is even better!"

The Raleigh Durham area Your Bottle Means Jobs campaign results during the March-May 2017 period saw an increase in bottles sold in Triangle MRFs by 2%. That's the equivalent of over 520,000 PET and HDPE bottles that got recycled into new products like t-shirts, textiles, plastic pipe and other goods produced in the Carolinas. From waste to wealth!



2017

BY THE NUMBERS

CAROLINAS PLASTIC RECYCLING COUNCIL

Media Spotlight

17.5M

Billboard

Impressions

1.13M

Radio Listens

909,362

Digital

Impressions

801

Pledges

15 Outreach Events

1,380 Newsletter Subscribers

PET Plastics
Recyclers

12

Companies

1,300+

Employees

Industrial
Plastics
Recyclers

17

Companies

500

Employees

Hosted

92

Industry
Leaders

Don't Waste Food SC

This is a collaborative campaign actively campaign with a joint partnership between S.C. Department of Health and Environmental Control and the S.C. Department of Commerce actively bringing together partners from across the public and private sector to help reduce food waste in the state. The campaign is designed to increase awareness of the economic, environmental and social impacts of food waste and empower individuals, businesses and communities to take action through outreach, education and technical assistance.

This emerging market has experienced record growth over the last 2 years. In 2017, in partnership with the Department of Health and Environmental Control, staff brought industry leaders together to galvanize efforts for food waste collection, processing and compost end-use market development. Two press conferences were held in Greenville, SC and in Horry County in collaboration with partners like Loaves and Fishes, Atlas Organics, Michelin, Horry County Solid Waste Authority, Horry County Schools, and Coastal Carolina University. On July 13, DHEC hosted the one year anniversary of the Don't Waste Food SC campaign at the State Farmers Market.

Staff engaged emerging leaders in the state notably partnering with the Darla Moore School of Business Marketing 465 class throughout the spring semester where 8 student teams developed marketing strategies for the campaign and identified best practices for targeting new audiences. Staff collaborated with USC's Center for Research in Nutrition and Health Disparities to develop a Policy Brief for decision makers and presented the campaign to a variety of audiences.

Commerce staff led the Organics Program at the 2017 Carolina Recycling Association conference in collaboration with the NC Department of Environmental Quality, developing dialog across the supply chain. Lastly, the Central SC's Stronger Economies Together planning process identified food waste reduction as a key economic development growth area in their 2017 report.



**DON'T WASTE
FOOD SC**

PREVENT • DONATE • COMPOST

www.scdhec.gov/dontwastefoodsc



2017

ORGANICS BY THE NUMBERS

21

Counties with
access to
Composting

393

Hosted
Industry
Leaders

5

Campaign
Videos

Food Waste
Diverted
in Tons

5

Held

Stakeholder
Meetings

Hosted

6

Tours

15,907.51

OUR PARTNERSHIP

Business

SC Department of Commerce

State agency responsible for economic development in SC. Recycling Market Development builds recycling markets, increases material recovery and promotes the recycling value chain.

1201 Main Street Suite 1600
Columbia, South Carolina 29201
(803) 737-0400
www.SCcommerce.com
www.RecyclinginSC.com



South Carolina
Department of Commerce
Just right for business.

Residential

SC DHEC

State agency that protects human health and the environment. The Office of Solid Waste Reduction and Recycling provides support to local governments and is non-regulatory in nature.

2600 Bull Street
Columbia, SC 29201
1-800-768-7348
www.scdhec.gov
<http://recyclemoresc.org>





The South Carolina Department of Commerce Recycling Market Development Advisory Council 2017 Annual Report" is submitted by the S.C. Department of Commerce in compliance with the S.C. Solid Waste Policy and Management Act of 1991(S.C. Code of Laws 44-96-60).

This report was published on March 15, 2018 by the Recycling Market Development staff at the S.C. Department of Commerce.