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Partnership keeps plastic from ending up in landfills

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Spartanburg, SC:

Carlos Gutierrez, president of United Resource Recovery Corp., talks about partnering with Coca-Cola to expand their facility to take plastic bottles and recycle them, making new plastic bottles ready for Coca-Cola's products.

At the United Resource Recovery Corp.'s plastics recycling plant in Spartanburg, used plastic is ground into small flakes. The flakes are cleaned extensively and then come out as plastic pellets, which are then shipped to another plant to become new plastic bottles.

That process, mastered to make the recycled plastic as good as new, as cheaply as possible, has put URRC in the forefront of plastic recycling in the U.S.

"The concept is very simple," said Carlos Gutierrez, president of URRC. "But the actual doing it, without injuring the polymer and removing all the other impurities, is where it took a few years."

That time paid off for URRC, which announced on Sept. 5 that it is teaming up with Coca-Cola to build the soft-drink company's first "bottle-to-bottle" recycling plant for polyethylene terephthalate (PET) plastic in the United States.

Promoting the process

Coke will invest about \$45 million in the plant, which will sit adjacent to URRC's facility at North Blackstock and Campground roads. Coca-Cola will spend roughly \$15 million more to promote recycling nationally, with a long-term goal of having 100 percent of its plastic bottles recycled or reused.

URRC has about 40 workers and will hire about 100 more by the time the new plant is fully operational in about two years. When completed, the plant will be able to produce 100 million pounds of food-grade recycled PET a year, the equivalent of about 2 billion 20-ounce bottles.

The plan has been in development for a long time, Gutierrez said, but has been held up because of trouble finding funding to build the plant.

"We went around and around and around on that one," Gutierrez said. "Finally, Coca-Cola got tired of all the false leads and they decided to do it."

PET is a common plastic that is used to make the bottles that Coke manufactures. Coca-Cola has been using PET since 1977; in fact, the company's first PET bottle using metric dimensions was a two-liter bottle made at the Spartanburg Coca-Cola Bottling Co.'s plant on West Main Street.

Compared with glass and paper, plastic is relatively new, and industry is only now beginning to find a profitable way to reuse the material.

"One important thing is that this is a cheaper process than many of the others," Gutierrez said. "The thing is, you can recycle anything you want to, but it may cost three times more to recycle it. For example, if it takes one gallon of diesel to recycle one gallon of diesel, then you're not doing anything."

Recycling is big business in America. In 2001, the Environmental Protection Agency released a study in which it estimated that the recycling industry employed about 1.1 million people and generated about \$236 billion in annual revenues.

Betty McLaughlin, executive director of the Container Recycling Institute in Washington, said beverage containers are still a huge growth area for the recycling industry.

"It's big business, but it's not big enough," McLaughlin said. "These materials, considered solid waste for so long, really are raw materials waiting to be mined by manufactures to make new materials."

URRC's success as a plastics recycler goes back to its origins in silver recovery. Gutierrez, a chemical engineer, founded URRC in 1992 with the mission of salvaging silver and other byproducts from used X-ray film, much of which is made out of PET plastic. The company still does that work at a plant in Tennessee.

Through the process of removing silver from PET, the company learned how to clean PET, and in 1996 URRC received a grant from Coca-Cola to research its methods and show they could be commercially viable.

"Basically it was a precious-metals business," said Gerry Fishbeck, URRC's vice president for operations. "The object is to get the silver off the film. We learned how to clean PET very well because we wanted to get all the precious metals off."

The new plant will serve as a "sort-and-grind" facility. URRC will receive bales of used plastic bottles and will separate the PET from other materials, including bottle caps and labels (which are made of a different type of PET) as well as metals such as aluminum.

"We'll still be collecting those (other items) and will be recycling them as well," Fishbeck said. "We'll find buyers for aluminum, find buyers for steel. We collect those things."

The remaining PET then will be ground into flakes and sent to the cleaning facility in URRC's existing plant. The method thoroughly removes contaminants on the plastic with a method that Fishbeck and Gutierrez compare to the peeling of an onion. Unlike simply cleaning the plastic, the process removes a layer or two of the skin.

Ninety-one percent of the remaining plastic is reusable, Gutierrez said, adding that a small percentage of it can be used as polyester fibers for fabrics.

About 75 percent of the material, though, will be strong enough for food-grade plastic and will be formed into small plastic pellets. Those will be sent to a Coca-Cola bottling plant in North Carolina which makes new bottles out of recycled material.

"We have not figured out how to convert dirt to polyester yet," Gutierrez said with a laugh, referring to the company's attempts to find a use for every material. "Give us a little bit of time on that."

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