



Waste Characterization Results

Recycling and Composting Bin Deployment at Five Pret A Manger Locations in New York City, NY

Executive Summary

Prepared by Global Green USA
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Eliminate Waste.
Harvest Assets.
Make Money.

The Opportunity

By launching recycling and composting programs to divert waste from landfills, the accommodation, foodservice, and retail sectors have the opportunity to reduce greenhouse gas emissions, save money, and better serve customers seeking to lead a greener lifestyle.

It is estimated that the average quick-service restaurant landfills the following amounts of packaging and food waste per year, resulting in significant greenhouse gas emissions and costs to the business:¹

Average Quick-Service Restaurant Waste Stream Volume and Impacts Per Location

Material	Lbs. Discarded Annually per location ²	GHG emissions (lbs.CO2e) ³	Costs to Each Location ⁴
Paper	47,980.8	-1,919.23	\$1,057.74
Plastic	7,539.8	527.79	\$166.21
Metal	979.2	38.19	\$21.59
Glass	2,839.7	110.75	\$62.60
Food Waste	38,188.8	30,169.15	\$841.87
TOTAL	97,528.3	28,926.65	\$2,150.01

Global Green's Coalition for Resource Recover (CoRR) is undertaking programs to develop cost-effective solutions for recovering the value in waste streams generated by the accommodation, retail, and food service sectors in the U.S. to assist them in achieving their sustainability goals. Specifically, CoRR's programs include:

- **Foodservice Packaging:** Develop cost-effective systems to recycle food service packaging into valuable, high-quality materials.
- **Wholesale Food Packaging:** Replace non-recyclable wax-coated wholesale transfer packaging with recyclable alternatives.
- **Food Waste:** accelerate the development of a reliable, environmentally sound, and economical commercial food waste recovery infrastructure.

Combined, CoRR's programs provide a national opportunity to:

- Divert 6 million tons of waste from landfills reducing greenhouse gas emissions by 16 million tons annually, equivalent to removing 4.9 million cars off the road;
- Save businesses and municipalities over \$250 million per year in waste disposal costs;
- Influence the design of packaging and recycling systems throughout the world.

¹ California Integrated Waste Management Board (2006) "Waste Disposal and Diversion Findings for Selected Industry Groups: Fast Food Restaurants." Available at <http://www.calrecycle.ca.gov/Publications/Documents/Disposal/34106006.pdf>

² Assumes 15 employees per location, at waste generation rates given in the 2006 CIWMB report.

³ Based on EPA Waste Reduction Model (WARM) tool, available at http://www.epa.gov/climatechange/waste/calculators/Warm_Form.html

⁴ Based on the US average landfill tip fee of \$44.09, as stated in BioCycle "State of Garbage in America 2011" report.

Waste Characterization Executive Summary

Landfilling recoverable wastes, such as packaging and food, costs the foodservice industry millions of dollars each year and releases potent greenhouse gases. With the support and participation of a variety of corporate partners, Global Green's Coalition for Resource Recovery (CoRR) develops systems by which these wastes can be consistently and economically recovered, bringing valuable material back onto the market and creating a net greenhouse gas benefit. These partners have the opportunity to advance their sustainability and waste diversion performance, better serving customers seeking to lead a greener lifestyle.

As part of the CoRR project, Global Green is working with Pret A Manger, an international chain of quick-service fresh food and coffee shops with a company-wide goal of 75% waste diversion from each store, and participation of 80% of their stores.⁵ In 2011 Pret A Manger deployed front-of-house four-stream bins at five locations which collected paper; metal, plastic, and glass; trash; and, for the first time, front-of-house food waste. Pret A Manger also commenced a back-of-house food waste collection program in these and other stores. To our knowledge the four-stream system has seldom, if ever, been implemented by quick-service restaurants without a government mandate to do so (New York City does not have such a mandate).

In May of 2012, after the four-stream bins had been in the stores for approximately one year, Global Green undertook a waste characterization which included two waste sorts, in-store observations, and five after-hours store visits where the full waste stream was weighed. The purpose of this process was to determine the following for the waste stream as a whole, as well as for each stream individually:

- Overall diversion rate (how much material in total, by weight, is being recycled or composted)
- Efficacy of front-of-house and back-of-house recovery systems
 - Capture rate (how much of the potentially recoverable material discarded in the store is going into the right bin)
 - Composition (the purity and/or contamination levels of each of the recoverable waste streams)
- Recommendations to increase Pret A Manger's diversion

Based on the success of this project, both with customer participation in the front-of-the-house and kitchen associates in the back-of-the-house, Pret A Manger plans to expand the deployment to all locations where they control the waste contracts. In addition, Global Green is currently seeking potential restaurant and affiliated project members to join Pret A Manger in pioneering the expansion of CoRR's resource recovery projects. For more information, please visit www.thecorr.org.

⁵ For more information about Pret A Manger's sustainability initiatives, please visit <http://www.pret.com/us/sustainability/>

Key Findings

CoRR's pilots yield valuable findings that can inform efforts to improve diversion rates as well as the larger conversation concerning best practices for resource recovery. The following is a short list of lessons learned from Pret A Manger's waste characterization:

Participating Pret A Manger Locations Achieve 55% Diversion

The locations assessed are approaching Pret A Manger's corporate goal of 75% diversion.

The Front-of-House Four-Bin System for Food Waste and Recycling Works

Recovered streams achieved 50-73% purity. The front-of-house composting stream, which has seldom been deployed in a quick-service environment, achieved the highest purity of 73%. Combined with the back-of-house food waste stream, which comprises 90% of the food waste achieved over 99% purity, Pret's full food waste stream was 98% pure, on par with the average for material received at Peninsula Compost, the facility currently receiving Pret's food waste.

Pret A Manger's Recyclable Paper Collection Has Quadrupled in One Year

The average per-store volume of paper collected from the front-of-house for recycling has increased from 2.83 pounds per day to approximately 12.35 pounds per day since the last waste sort conducted in March 2011, fourteen months ago. This is a tremendous improvement, and an indication that customer and/or employee participation has increased over time.

Composting Paper Towels and Napkins Could Significantly Increase Total Diversion

Paper towels and napkins often contain short fibers that make them unsuitable for recycling, but they are often able to be composted. According to ASTM International Standard D6868, if paper items meet certain criteria for biodegradability, and have additives at less than 1% of weight or that are biodegradable, the item is considered acceptable for industrial composting.⁶ If Pret A Manger finds that their paper towels meet these criteria, and captures 80% of their front- and back-of-house paper towels and napkins in the compost stream, they would increase diversion by nearly 7%. Since napkins and paper towels are also a significant contaminant in many other streams, this is likely to improve stream purities across the board.

Innovations to Recover Plastic Film Could Increase Diversion

Film comprised 6% of the waste stream by weight, and much of this mass is likely to be food residuals. Further research and innovation is needed in this area to allow for diversion of contaminated film.

⁶ As reported by GreenBlue in "Design for Recovery Guidelines: Paper Packaging." (2011). Available at http://www.greenblue.org/wp-content/uploads/2011/07/CTL_Design-for-Recovery_Paper_web.pdf



Acknowledgements

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About Global Green USA and its Coalition for Resource Recovery

The Coalition for Resource Recovery (CoRR) is a working group of companies, under the direction of Global Green USA, dedicated to combating climate change and generating business value by transforming waste into assets. CoRR conducts pilots and related research to identify and accelerate development of scalable, transferable waste diversion programs and technologies.

The Coalition for Resource Recovery is a project of Global Green USA, a nonprofit, 501(c)(3) tax-exempt organization. Global Green works to create sustainable urban environments and combat global warming through a unique cross-cutting approach that merges innovative research, technical assistance, cutting-edge community based projects and targeted education and outreach.

CoRR Members

Action Environmental Group	Duro Bag	Pratt Institute
Baluchi’s	First Fiber Corporation of America	Pret A Manger
BASF	Green Bay Packaging	Spectra-Kote
Bemis	IESI	Starbucks Coffee Company
Chemol	Imerys	Transtech Inc.
Clean River	Interstate Container	Wastequip
DBB Partners	Jamba Juice	Western Michigan University
Design and Source Productions	LBP Manufacturing	Coating and Recycling Pilot Plant

For more information about this report and the Coalition for Resource Recovery, please visit www.thecorr.org, or contact Lily Kelly at lkelly@globalgreen.org.