

GLASS RECYCLING

by Tracy Frisch, Environment Committee

Until a few months ago, I was unaware of glass recycling's potential. I did not know that industrial glassmakers in the U.S. cannot purchase as much recycled glass as they want. Like so many Americans, I had swallowed the pervasive falsehood that glass recycling is impractical. My ignorance was particularly striking since I am active in the Zero Waste movement (as co-founder of the Co-op's Environment Committee in 2017 and Warren County's Zero Waste Initiative in 2019). No matter how much we learn in our efforts to bring about Zero Waste, there is always room for improvement.

Glass is heavy, so trucking costs can be an obstacle; but solutions can be found, including freight trains. Even factoring in transportation, greenhouse gas savings of using recycled glass to make new glass are significant.

Advantages of glass recycling

Glass is a superb recyclable with an array of benefits. Unlike paper, cardboard, and plastics, glass (like metals) can be recycled an infinite number of times without degradation of quality. In fact, using recycled glass to make new glass actually improves quality, resulting in fewer bubbles and defects. The process is easy because glass jars and bottles are pure glass, not treated with toxic additives such as phthalates, PFAS compounds, or BPA, like some plastic and metal containers.

Recycled glass also has economic and environmental advantages. Glass is made from sand (silica), soda ash, and limestone. Silica must be melted under intense heat, at least 3090°F (the addition of soda ash lowers this melting point). Using recycled glass saves nature's resources, reduces the need to mine and process raw materials, and lowers required amounts of fossil fuel. It also reduces air pollution from particulate matter, nitrous oxides, and sulfur oxides. Burning less fossil fuel also reduces greenhouse gas emissions.

Recycled cullet (crushed glass) can replace all raw materials used to make glass, though it generally makes up a fraction of mix. Every 10% of cullet used in the total mix reduces the glass furnace's energy use by 3%. Six tons of cullet saves one ton of CO₂ emissions.

"Glass is the most beautiful of recycled materials. It is home-grown, infinitely recyclable, saves significant amounts of energy and allows multimillion-dollar furnace equipment to last years longer compared with using virgin materials in production."

—Neil Seldman

To recycle, glass must meet high standards.

Recycled glass must be clean and free of metals and other contaminants, so recyclers must adhere to industry requirements. Even a tiny bit of metal can ruin an entire batch of glass in a glass furnace. That would be a very costly mistake so glassmakers have strong motivation to refuse contaminated shipments.

Prior to delivery for reprocessing, glass must be sorted by color. Clear glass has the highest value, while certain colors bring minimal or no demand. At least one regional facility has optical scanners that automatically sort glass by color.

Due to flaws in U.S. recycling systems, glassmakers are unable to obtain sufficient quantities of recycled glass. You might think that you are doing your part but according to Ann Arbor Recycles, 60% of glass bottles and jars placed in single-stream recycling bins don't actually get made into new glass.

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Recycling programs are eliminating glass.

Neil Seldman, co-founder of the Institute for Local Self-Reliance and director of its Waste to Wealth Initiative, reports that scores of cities have dropped glass from their recycling programs. Yet glass makes up a fifth to a quarter of total recyclables in residential collection.

What's behind this development? Many sorting facilities—known as materials recovery facilities (MRFs)—complain that glass, which acts as an abrasive when broken (think sandpaper), is too hard on their equipment.

MRFs also have another problem with glass—they can't make any money with it because it's too contaminated to meet glass industry standards.

In 2018, Honest Weight's Environment Committee toured Sierra Processing, the MRF near the Port of Albany that sorts recyclables collected by the City of Albany and other local waste haulers. During the tour, I inquired about an impressively large multicolored pile against the back of the building. Our guide explained that it was glass used to build landfill roads; the mixed-in plastics created the colors. This glass came from glass bottles and jars that people put into their recycling bins; this pile of thoroughly contaminated, no longer recyclable glass vividly illustrated the failure of single-stream recycling. Recycling requires purity, something that single stream (which mixes all types of recyclables in one collection bin) cannot deliver.

The greenest ways to deal with glass

Refillable glass bottles and jars are the best option. This form of reuse requires some transportation and washing, but much less energy than processing and melting the glass down. On the Zero Waste hierarchy, reuse is always preferred over recycling.

At Honest Weight, you can buy Meadow Brook Farms milk in deposit glass bottles and Berle Farm organic yogurt in returnable glass jars.* Rather than recycling, these farms reuse these containers over and over.

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*Honest Weight Dairy Buyer Laura Angell adds that Hudson Falls-based Argyle packages their 5.3 oz Greek "cutie" yogurts in glass. While they don't use a deposit system, the jars are certainly recyclable, especially here with our glass recycling bins.

Glass Recycling in the U.S. by the Numbers

- Glass container & fiberglass manufacturers buy 3.2 million tons of recycled glass yearly.
- 2.4 million tons of recycled glass are made into new bottles and jars annually.
- The U.S. glass container industry employs 18,000 people.
- About 1/3 of all new glass containers contain recycled glass.
- 60% of recycled glass becomes new containers or insulation.
- About 1/3 of all glass containers in the U.S. are recycled.

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Much more is possible. Oregon offers a model statewide refillable bottle system used by a growing number of breweries.

The next best option is a “bottle bill,” or container deposit law. Bottle bills, which we have in New York, give incentives for recycling to consumers as well as to people known as “canners” who gather up bottles and cans for the redemption fee.

Bottle bills generate a much cleaner stream of recyclable glass than curbside recycling, where glass is mixed with other recyclables and often contaminated. Most glass bottles collected under bottle bills are actually recycled.

According to the NYS Pollution Prevention Institute’s 2019 study of the impact of bottle bill expansion for the NYS DEC, “Deposit glass is less contaminated than glass collected as part of curbside, single-stream recycling programs, increasing recyclability and marketability of secondary use glass.”

How to Recycle Glass At Honest Weight

We now have bins designated specifically to collect clear glass by the bike lockers on the side of the building, clearly marked with signage. We will accept:

- clear glass from non-deposit containers
- reasonably clean of residue
- free of lids
- no plastic rings attached
- no colored glass, dishes, cookware, metal, or plastic

Another solution is glass-only bins and collection sites. Honest Weight recently partnered with Capital District Zero Waste on a new glass-only recycling pilot project (located near the Blue Rhino propane station outside the Co-op). This pilot project has been collecting clean, clear glass containers as desired by its partner, TOMRA, a global corporation known for reverse bottle bill vending machines. TOMRA has a facility in Rotterdam and a glass processing facility south of Rochester to clean recycled glass and turn it into glass cullet.

While fewer people will use such collection sites than use curbside recycling, glass collected at such sites will actually be recycled.

Some of us live in communities with **town- or county-run transfer stations** where residents can drop off sorted recyclables. As long as glass is free of contamination and plastic or metal caps, municipalities can find markets for it. For efficiency of transportation, however, glass brokers ask that glass be aggregated into large truckloads.

Some waste haulers no longer accept glass in curbside recycling because the MRFs they use (and in some cases own) do not want it. Some waste haulers, such as the local Twin Bridges, have begun offering customers a **special glass-only bin**.

In Germany and Switzerland, 90% of glass is recycled. We can do better in the U.S., but major improvement will require more than individual action, so let’s cooperate to change the world!

September’s Book Group Selection:

Mindful of Race: Transforming Racism from the Inside Out

by Ruth King

Thursday • Sept. 9 • 7–9pm

Co-facilitated by the Membership and Anti-Racism Committees

As King writes, “Racism is a heart disease, and it’s curable.” Her book brings the mindfulness and compassion of a meditation practice to shed light on how people of all races can begin to heal the dynamics of oppression. We invite you to join us in this HWFC community discussion as part of a transition to a more just and healthy society.

•Join Zoom Meeting Online

<https://zoom.us/j/93245124472>
Meeting ID: 932 4512 4472

•To join by phone

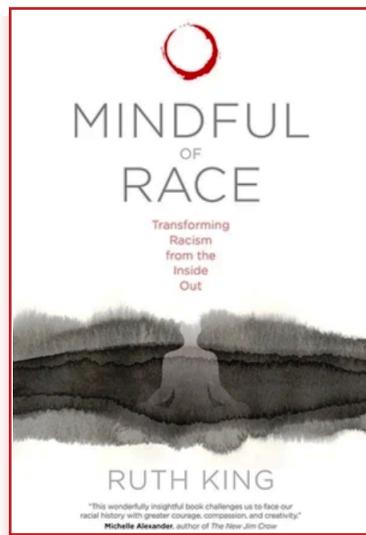
+1 929 205 6099 US (New York)
Meeting ID: 932 4512 4472

•Facebook link to September’s book event:

<https://fb.me/e/2UHpJdk3c>

Any questions? Email

MembershipComm@honestweight.coop



BookHouse offers copies at discount to the HWFC community (with mention of the reading group) as well as audiobook options; or contact Yvette for loaner copies at memberservices@honestweight.coop. (See more details: page 3, column 3.)