What is Zero Waste?

Simply, Zero Waste means minimizing the amount of garbage we create by reducing what we need, reusing as much as possible, recycling what we can, and composting what we cannot.

Zero Waste is a philosophy and a design principle for the 21st Century to conserve resources by responsible production, consumption, reuse, and recovery of products, packaging, and materials. Zero Waste emphasizes sustainability by considering the entire life cycle of products, processes, and systems.

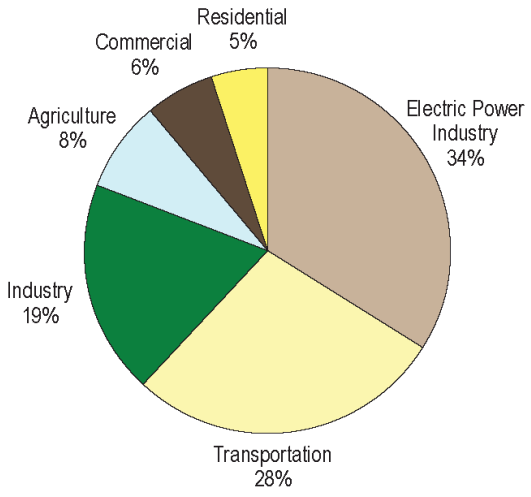
The goal of Zero Waste is to move to a circular economy where waste ceases to be generated. We currently live in a linear economy where we take resources from the earth and use them briefly before they end up as trash that we either dump or burn. Instead of discarding resources, a circular economy is a system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, and aims for the elimination of waste through the superior design of materials, products, systems, and business models so that all resources can be resumed back into the system.

Zero Waste and Climate Change

Zero Waste is one of the most effective first steps for a community to reduce its greenhouse gas (GHG) emissions.[1]

Traditional inventories of GHG emissions provide an account of emissions by economic sector (Figure 1).

Figure 1. Sector-Based View of GHG Emissions (2006)*



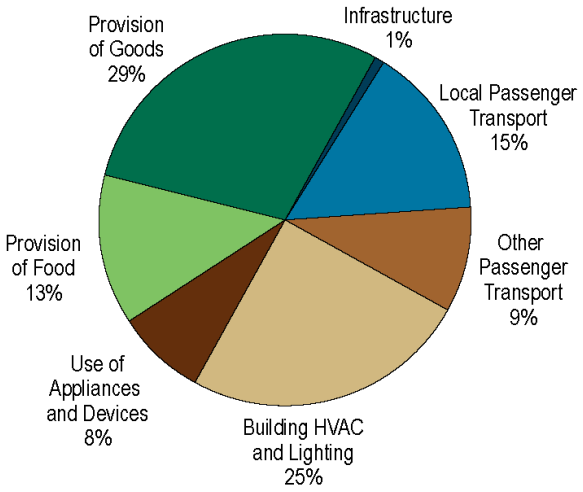
* This figure reflects data from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006* (U.S. EPA, 2008), Table 2-12. This figure excludes emissions from U.S. territories, which are not allocated to economic sectors.

[1] https://www.ecocycle.org/zerowaste/climate

By allocating emissions according to economic sectors, the majority of greenhouse gas emissions occur in the electric power, transportation, and industrial sectors. This view suggests that these three sectors are the most important to control in order to reduce overall emissions and address climate change. In this representation, products do not play an obvious role. However, if we consider the impacts of products more completely, across the life cycle of extracting raw materials, processing, manufacturing, transporting, using, and disposing of products, we see a different picture.

To better describe the connections between materials, land management, and climate change, USEPA presented a systems-based inventory of U.S. GHG emissions[2] (Figure 2). Each system represents all the parts of the economy working to fulfill a specific need. For example, the provision of food includes all emissions from the electric power, transportation, industrial, and agricultural sectors associated with growing, processing, transporting, and disposing of food.

Figure 2. Systems-Based View of GHG Emissions (2006)



This figure reflects the same GHG emissions data shown in Figure 1, using a systems-based approach. Emissions from U.S. Territories are not included in this figure.

The system-based approach by the USEPA reflects the management of material resources as they flow through the economy, from extraction of materials and food, production, transport, provision of services, reuse of materials and, if necessary, disposal. The system-based perspective in Figure 2 shows that the way we produce, consume, and dispose of our goods accounts for 29% of our nation's GHG emissions. **This means the choices we make about our "stuff" has a bigger impact than driving our car or heating our homes.**

Building on the USEPA analysis, adding the impacts from production of products abroad that are consumed in the U.S. brings the share of products and packaging to 44% of total U.S. GHG emissions[3]. Provision of food accounts for an additional 13% of emissions, bringing the total contribution of goods and food to 42%, not including, or 56%, including international trade.

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[2] https://www.epa.gov/sites/production/files/2016-08/documents/ghg-land-materials-management.pdf

[3] https://www.no-burn.org/wp-content/uploads/PPI-Climate-Change-White-Paper-September-2009.pdf

By using the materials management systems approach to measure our GHG emissions, we can see the huge impact we can have by consuming less, recycling more, and expanding composting programs.

The Carbon Footprint of Food

The U.S. is the global leader in food waste. Americans discard nearly 40 million tons (80 billion pounds) of food every year, comprising 30-40% of the U.S. food supply[4]. USEPA estimated that in 2017 more food reached landfills and combustion facilities than any other single material in our everyday trash.

Wasting tons of food causes huge economic losses and a lot of needless hunger, but there are climate environmental issues deeply connected to food waste, according to a report from the U.N.'s Food and Agriculture Organization (FAO). The FAO's *Food Wastage Footprint: Impacts on Natural Resources* analyzes the impacts of global food wastage from an environmental perspective, specifically looking at its consequences for the climate, water and land use, and biodiversity[5]. The report found that the carbon footprint of food produced and not eaten is estimated at 3.3 billion tons of greenhouse gases, making food wastage the third top GHG emitter after the U.S. and China.

In 2015, the USEPA announced the first ever domestic goal to reduce food loss and waste[6]. The U.S. 2030 Food Loss and Waste Reduction goal can help feed the hungry, save money for families and businesses, and protect the environment. Led by the USDA and USEPA, the federal government aims to work with communities, organizations, and businesses along with partners in state, tribal and local government to reduce food loss and waste by 50% by 2030.

Options if you can't reduce wasted food:

Donate nutritious, safe, untouched food to the Ashland Food Pantry to help those in need.

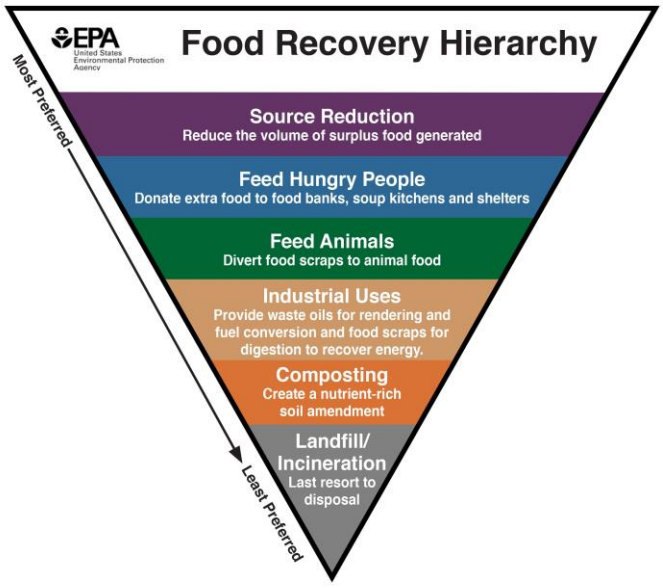
Compost food scraps rather than throwing them away.

The USEPA Food Recovery Hierarchy[7] prioritizes actions and focuses on different management strategies for your wasted food. The top levels of the hierarchy are the best ways to prevent and divert wasted food because they create the most benefits for the environment, society and the economy.

[4] https://www.rts.com/resources/guides/food-waste-america/
[5] http://www.fao.org/3/i3347e/i3347e.pdf
[6] https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal

[7] https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy

Figure 3: Food Recovery Hierarchy



Each person can play a significant role in reducing GHG emissions and fighting climate change simply by buying less and reducing their trash output!

Achieving "Zero Waste" doesn't mean you will never have any trash, but rather it is a commitment to reduce your consumption as much as you can. Here are some tips.

TIP: Pare Down

First, consider your purchases carefully. Less is more.

Refuse freebies and gimmicks that you don't need, especially those made of plastic.

Remove yourself from junk mail lists to cut down on paper.

Reduce the use of harmful, wasteful, and non-recyclable products (such as Styrofoam and plastic straws).

Use the minimum amount required to avoid unnecessary waste. For example, print a document double-sided.

Borrow rather than buy. If you need books, movies or magazines, visit your local library.

When purchasing, consider opting for used, pre-owned, or secondhand items.

Instead of giving gifts that someone won't use or need, provide experiential gifts that create fun memories, not waste.

Reuse items instead of buying new ones.

TIP: Replace Disposables

Single-use disposable items, often made of plastic, have created a "throw-away" culture. The rate at which we consume plastics has become unmanageable, and plastic trash has become one of the world's greatest environmental challenges. Replace disposable eating utensils, cups and plates, and water bottles with compostable or reusable alternatives.

Here are some more ideas:

- **Tea bags** – loose tea and a tea strainer or French press
- **Disposable razors** – electric shaver, straight-edge razor, double-blade razor
- **Cotton rounds** – washable cotton rounds
- **Tissues** – handkerchiefs
- **Paper towels** – cotton cloths
- **Paper napkins** – cloth napkins
- **Dish sponge** – cotton cloth
- **Tin foil and plastic cling film** – put it in a food container or jar, wrap it in a dish towel, or cover with a reusable silicone topper
- **Paper bags and plastic bags** – bring your own cloth tote bag
- **Disposable lunch bags** – pack your lunches in reusable food containers such as stainless steel food containers or mason jars (and bring your own containers to restaurants and stores)
- **Trash bin liners** – if you have little trash, and especially if you compost, you might not need these anymore
- **Cleaning wipes** – cotton cloth and homemade cleaning solution (1/4 cup distilled vinegar and 1 cup of water) or disinfecting solution (alcohol solutions with at least 70% alcohol, or bleach solution with 1/3 cup bleach per gallon of water or 4 teaspoons bleach per quart of water)

TIP: Prolong the lifespan of things

When things become worn or stop working, they often end up in the trash. By maintaining, and when necessary repairing, the items in our homes, we can keep them functioning longer.

We live in an age when gadgets are only cool until the next model is introduced just months later, when fashion stores are supplied with new collections every week, when buying a new printer is cheaper than replacing the ink. Things are designed to be short-lived so we can replace them faster. There is a term for that: *planned obsolescence*.

Although consumer products are generally made to become obsolete in one way or another, some items can be repaired. If you yourself do not have the skills to fix everything yourself, you can use online repair resources or have things repaired in a shop. When you do make a purchase, opt for quality and repairability.

TIP: Give your things a second life

For every item that can't be refused, reduced, or reused, try repurposing it ("upcycling"). Sometimes it requires using some creativity, but the possibilities are endless. Try using wasted printer paper for scrap paper, cardboard boxes for storing supplies, and mason and other glass jars to store food.

TIP: Recycle

In addition to the items you can recycle curbside, TerraCycle offers free recycling programs funded by brands, manufacturers, and retailers around the world to help you collect and recycle your hard-to-recycle waste. Simply choose the programs you'd like to join; start collecting in your home, school, or office; download free shipping labels; and send TerraCycle your waste to be recycled.

Use this link to look up which brands can be recycled this way: https://www.terracycle.com/en-US/brigades

TIP: Regift or donate what you don't need or use

Extend the life-cycle of an item you may no longer need by selling or donating it or give it to someone else.

WASTE MANAGEMENT

The USEPA developed the non-hazardous materials and waste management hierarchy[8] in recognition that no single waste management approach is suitable for managing all materials and waste streams in all circumstances. The hierarchy ranks the various management strategies from most to least environmentally preferred. The hierarchy places emphasis on reducing, reusing, and recycling as key to sustainable materials management.

Figure 4. Waste Management Hierarchy

[8] https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy