

Food Waste & Greenhouse Gas Emissions

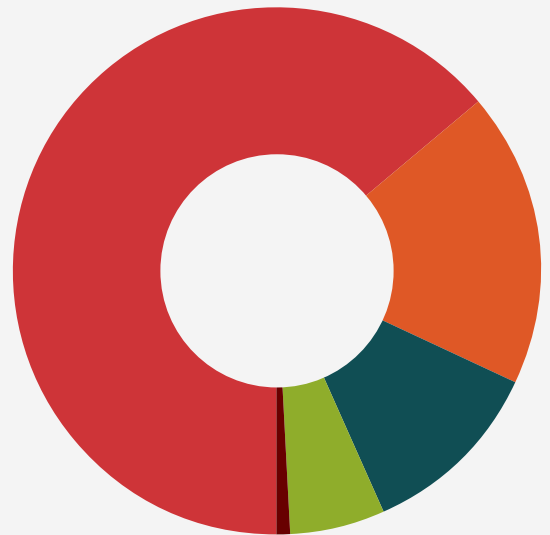


Reducing food waste is a clear pathway to slashing greenhouse gas emissions, and addressing climate change is a central goal for the U.S. Food Waste Pact. Through the “Target, Measure, Act” framework, businesses that join the U.S. Food Waste Pact can make significant reductions in their own emissions—and have an even greater impact by working collectively with their industry peers.

Wasted food contributes 6.1% of greenhouse gas emissions in the United States. Emissions are generated at each point of the supply chain as food makes its way from production to consumers, and whenever surplus exits the system, additional emissions are generated along the waste management pathways. Total emissions from surplus food were estimated to be nearly 390 million metric tons of CO₂e in 2022, more than the entire aviation sector and equivalent to 30% of U.S. passenger vehicle transportation. Particularly concerning are methane emissions produced when food is wasted and sent to landfill. EPA reports that food waste is the #1 material entering landfills by weight and that nearly 60% of landfill methane emissions come from food material.

Emissions by Sector in 2022

Source: **ReFED Insights Engine**



- **248 million** Metric Tons of CO₂e came from **Residential/Consumer**
- **70.7 million** Metric Tons of CO₂e came from **Foodservice**
- **43.8 million** Metric Tons of CO₂e came from **Manufacturing**
- **22.6 million** Metric Tons of CO₂e came from **Retail**
- **4.26 million** Metric Tons of CO₂e came from **Farm** (produce only)



How Food Waste Solutions Address Climate Change

The effectiveness of food waste solutions in reducing emissions varies:

- **Prevention solutions** ensure that food is kept from going to waste at each point in the food supply chain prior to human consumption—production, manufacturing, transportation, storage, and retail. These strategies—which include upcycling, waste tracking, right-sizing, demand planning, and more—are critical to reducing greenhouse gas emissions, as the majority of emissions come from upstream activities.
- **Rescue solutions** that focus on recovering or donating food before it goes to waste keep it in the human supply chain and contribute to a more equitable food system.
- **Recycling solutions** can be employed as a last resort to keep food from going to waste. Turning wasted food into animal feed, for example, can help ensure that food is ultimately consumed.



Generators of food waste can also consider sending surplus material to waste destinations—composting, anaerobic digestion, and land application—where food can be used to create valuable byproducts before it begins to decay. While these options are preferable to undesirable pathways like landfill, incinerators, and going down the drain, preventing food from going to waste in the first place is the most effective way to reduce food waste and the emissions generated from its journey through the supply chain.

Business signatories of the U.S. Food Waste Pact can participate in upstream and downstream waste reduction in a number of ways, including piloting solutions through intervention projects, participating in pre-competitive working groups, and sharing and tracking waste data to be measured annually.

Reducing Food Waste Through Prevention Solutions

According to ReFED's latest estimates, 93% of emissions from food waste come from production and supply chain activities. Further, it's estimated that when food waste is cut in half, **80% of the resulting emissions reductions come from solutions that keep food from going to waste in the first place**. Here are three case studies conducted by Pact signatories through their participation in the Pacific Coast Food Waste Commitment that implemented prevention solutions and saw results:



Manufacturing

[DOWNLOAD CASE STUDY](#)



Foodservice

[DOWNLOAD CASE STUDY](#)



Retail

[DOWNLOAD CASE STUDY](#)

Additional Resources



EPA reports that **58% of methane emissions from landfills come from wasted food**.

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The Pacific Coast Food Waste Commitment reports that a decrease in retailers' food waste led to a **30% decrease in greenhouse gas emissions from unsold food in the region over a four-year period**.

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To learn more about how businesses can be part of the U.S. Food Waste Pact to reduce carbon emissions and more, contact Tara McNerney at Tara.McNerney@wwfus.org.