

Plastic Helps Reduce Greenhouse Gas Emissions

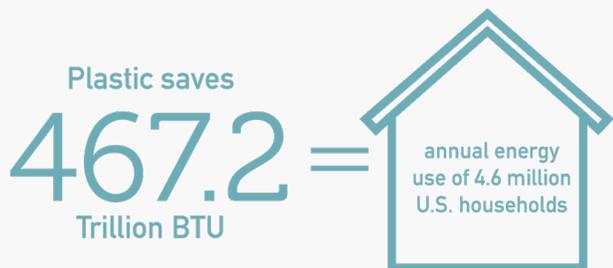
To combat climate change, we must reduce greenhouse gas emissions.
Plastic helps reduce greenhouse gas emissions.

For example, because plastic packaging and products are strong yet lightweight, they allow us to do more with less material than alternatives – nearly four times less on average – which results in fewer greenhouse gas emissions. Lightweight plastic also helps make our homes and cars more energy/fuel efficient, which cuts greenhouse gases. Plus, plastic packaging helps prevent food waste, a primary source of greenhouse gas emissions.

Plastic Helps Reduce Greenhouse Gas Emissions from Our Homes and Cars

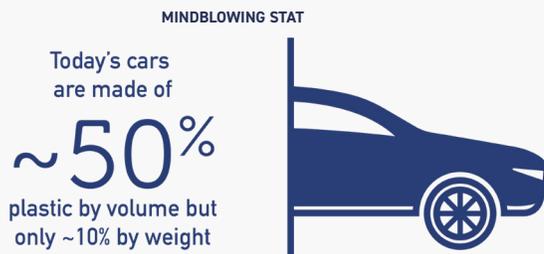
Foam plastic insulation helps make our homes more energy efficient, and lightweight plastic auto parts help us save fuel—both help cut greenhouse gas emissions.

Foam plastic insulation helps us save more energy in our homes than alternatives, which saves us money and reduces greenhouse gas emissions.



→ One-year study: Using plastic building and construction materials saved more than 465 trillion BTUs of energy over alternative materials.¹ Less energy use = reduced greenhouse gas emissions.

Lightweight plastic auto parts reduce the weight of our cars, which gives us better gas mileage and reduces greenhouse gas emissions.



→ Carmakers are using more durable, lightweight plastic to help cut exhaust emissions. U.S. Department of Energy: "A 10% reduction in vehicle weight can result in a 6%-8% fuel economy improvement."²

Plastic Packaging and Products Help Reduce Greenhouse Gas Emissions

Plastic plays a central role in combating climate change. Studies find that alternatives to plastic packaging and products typically produce significantly more greenhouse gas emissions.

Study: Due in part to "less weight... required to perform same packaging function," plastic packaging uses 50% less energy than alternatives,³ which helps cut greenhouse gas emissions in half.



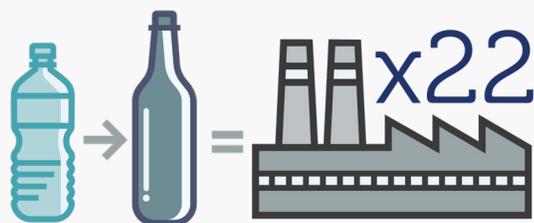
→ Plastic packaging generates 80% less solid waste by weight than common alternatives.³

Study: "Substitution of plastic packaging by other materials would in most cases increase energy consumption and [greenhouse gas] emissions."⁴



→ "Plastic packaging usually provides the same function with significantly less material... in most cases this leads to less production energy and [greenhouse gas] emissions."⁴

Study: "If all plastic bottles used globally were made from glass instead, the additional carbon emissions would be equivalent to powering around 22 large coal-fired power plants."⁵



→ When comparing carbon emissions, plastic packaging typically "performs better than its alternatives... mainly due to its very lightweight properties."

Study: Replacing plastic in consumer products and packaging with common alternatives would increase environmental costs nearly four times, in large part because plastic uses less material—on average, four times less.⁶

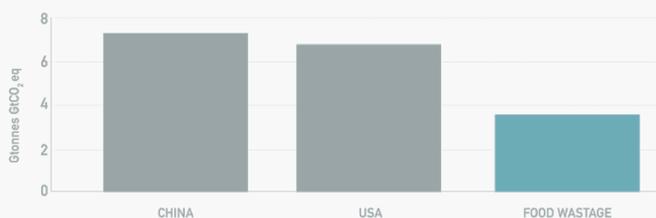
Alternatives to plastic packaging = 4x more environmental costs

→ Plastic packaging typically is lighter than alternatives. One benefit: less fuel used in shipping, resulting in reduced greenhouse gas emissions.

Plastic Helps Reduce Greenhouse Gas Emissions by Cutting Down Food Waste

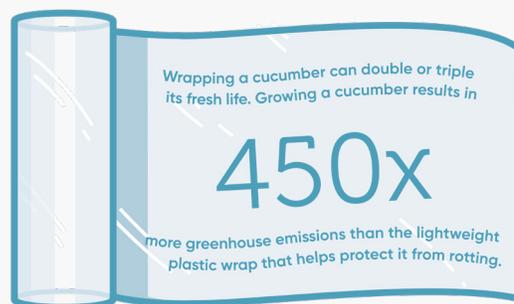
Plastic packaging helps our food stay fresher during its journey from farm to table, which helps cut down food waste—and the resulting greenhouse gas emissions.

If food waste were a country, it would be the third largest emitter of greenhouse gases, behind China and the United States.⁷



→ U.S. EPA: In 2018, "more food reached landfills... than any other single material," totaling 24 percent of material. Landfills produce 20 percent of total U.S. methane emissions (a powerful greenhouse gas).⁸

A little bit of plastic packaging can prevent a whole lot of food waste (and greenhouse gas emissions).



→ Plastic packaging helps extend the useful life of our food, which helps reduce greenhouse gas emissions (e.g., methane) from food waste.

Committed to a Cleaner Environment: Reducing Greenhouse Gas Emissions and Ending Plastic Waste

America's Plastic Makers are committed to combatting climate change while providing lifesaving products (e.g., personal protective equipment and vaccine delivery syringes). We're working toward two ambitious goals: 100% of plastic packaging in the U.S. will be recyclable or recoverable by 2030 and 100% will be reused, recycled or recovered by 2040. Achieving these goals will help combat climate change because recycling typically results in significantly reduced greenhouse gas emissions over the lifecycle of plastic packaging and products.

¹ Franklin Associates, LTD, Comparative Energy Evaluation of Plastic Products and Their Alternatives for the Building, Construction and Transportation Industries, 1991.

² U.S. Department of Energy, Vehicle Technologies Office, Lightweight Materials for Cars and Trucks.

³ Franklin Associates, Life Cycle Impacts of Plastic Packaging Compared to Substitutes in the United States and Canada: Theoretical Substitution Analysis, 2018.

⁴ denkstatt, The impact of plastic packaging on life cycle energy consumption and greenhouse gas emissions in Europe, 2011.

⁵ Imperial College London, Centre for Environmental Policy, Examining Material Evidence: The Carbon Footprint, 2020.

⁶ Trucost, Plastics and Sustainability: A Valuation of Environmental Benefits, Costs and Opportunities for Continuous Improvement, 2016.

⁷ Food & Agriculture Organization of the United Nations, Food Waste Footprint: Impacts on Natural Resources, 2013.

⁸ United States Environmental Protection Agency, United States 2030 Food Loss and Waste Reduction Goal

⁹ PlasticsEurope, Seriously, do we really need cucumbers wrapped in plastic?, 2012.

