



Plastic Pollution: False Solutions

The plastics crisis continues to grow, with increasing amounts of plastic waste entering our oceans and limited capacity to keep pace with managing it. To stop plastic from entering our oceans, we must reduce the amount of plastic being produced at the source. We must demand that companies reduce the amount of single-use plastic they are putting into the supply chain and find alternative ways to package and deliver their products.

Here are some false solutions that may sound appealing, but will ultimately fail at protecting our oceans without significant reductions in plastic production.

Recycling

While recycling is often presented as a solution to plastic pollution, it is not enough to solve the plastics crisis. In fact, only 9 percent of all the plastic waste ever generated has been recycled.

- As of 2015, approximately 8.3 billion metric tons of plastic had been produced, of which 6.3 billion metric tons became plastic waste. Of the plastic waste generated, only around 9 percent was recycled, 12 percent was incinerated, and 79 percent accumulated in landfills, on the ground or in the ocean.¹
- Researchers estimate that more than half of all plastic waste intended for recycling has actually been exported to various countries around the world.²
- Wealthier nations considered to have more robust waste management infrastructure are sending plastic waste to developing countries with less-established systems.²
- China has imported a cumulative 45 percent of plastic waste since 1992. However, starting January 1, 2018, China has permanently banned the import of nonindustrial plastic waste.²
- China's waste import ban has resulted in plastic waste backing up, or being sent straight to landfills. Some recyclables are still being exported to other countries with less-established waste infrastructures.

Incineration

Incineration or “waste-to-energy” plants are often misrepresented to the public as a source of renewable energy, but this is far from the truth. Burning municipal waste (MSW)—discarded materials such as plastic, paper and food waste—is an extremely inefficient means of generating energy that distracts from investing in real renewable and sustainable solutions.³



- Burning these materials releases toxic emissions – including known cancer-causing agents like dioxins and furans – that contaminate our air, soil and water, and threaten the health of people living near the incinerators.^{3, 4}
- Incinerators release higher levels of greenhouse gas emissions per unit of energy produced than coal, natural gas and oil-fired power plants.^{5, 6}
- An incinerator can emit up to 14 times more mercury than coal-fired power plants, according to the New York Department of Conservation.
- Society is recognizing the limitations of incineration and moving towards a zero-waste system, which involves waste reduction, composting, recycling and reuse, alteration in consumption habits and industrial redesign.³

Bioplastics

The term “bioplastics” is a broad term to describe bio-based and biodegradable plastics.⁷

Bio-based plastics can be made fully from renewable biomass—such as sugarcane or corn feedstock—or from a combination of renewable biomass and petroleum sources. One example of a bio-based plastic is bio-PET. While they may sound environmentally friendly, bio-PET bottles have the same chemical structure as their regular PET counterparts and come with the same polluting problems.⁸

Biopolymers—the “truly biodegradable plastics”—are made from natural substances that are chemically modified to make the material more durable, yet still designed to break down into natural elements with the help of microorganisms. The most commonly produced biopolymer is polylactic acid (PLA), which is made from plants, and polyhydroxyalkanoate (PHA), which is produced by bacteria. While these products have some advantages, both require industrial composting facilities to break down.⁸

- There are many types of bioplastics, which can lead to confusion in the disposal process.
- Many bioplastics are only partly made from renewable feedstock and still rely on fossil fuels for production.
- The biopolymers that are meant to be composted sometimes end up in recycling facilities, where they contaminate the recycled product and reduce its value⁹ making recycling even less effective.
- Being “industrially compostable” only makes a difference if your area has an industrial composting facility and established, easily accessible collection. Otherwise, compostable waste ends up in landfills, incinerators or the environment like all other plastic waste.⁸



Citations

- ¹ Geyer R, Jambeck JR and Law KL (2017) Production, use, and fate of all plastics ever made. *Science Advances*. 3: 7. doi: 10.1126/sciadv.1700782
- ² A. L. Brooks, S. Wang, J. R. Jambeck, The Chinese import ban and its impact on global plastic waste trade. *Sci. Adv.* 4, eaat0131 (2018).
- ³ GAIA (2018) Facts about “waste-to-energy” incinerators. *Global Alliance for Incinerator Alternatives*. 8p.
- ⁴ Waste Incineration and Public Health (2000) Committee on Health Effects of Waste Incineration, Board on Environmental Studies and Toxicology, Commission on Life Sciences. National Research Council. National Academy Press, pp. 6-7.
- ⁵ Platt B et al. (2008) Stop Trashing the Climate. ILSR, Eco-Cycle & GAIA.
- ⁶ U.S. EPA (2006) Solid Waste Management and Greenhouse Gases, A Life-Cycle Assessment of Emissions and Sinks 3rd edition.
- ⁷ European Bioplastics (2018) Bioplastics facts and figures. 15p.
- ⁸ B.A.N. List 2.0 (2018) Better Alternatives Now. 34p.
- ⁹ Momami B (2009) Assessment of the Impacts of Bioplastics: Energy Usage, Fossil Fuel Usage, Pollution, Health Effects, Effects on the Food Supply, and Economic Effects Compared to Petroleum Based Plastics. *Worcester Polytechnic Institute*.