

# The Hidden Costs of a Plastic Planet: Climate

HOW PLASTIC IS THREATENING THE CLIMATE AND HOW IT CAN BE STOPPED



PHOTO: © ARYFAHMED.

**Plastic is a key driver of the climate crisis.** Making, using, and discarding plastic threatens efforts to keep warming below 1.5°C.

**More than 99% of plastic is made from fossil fuels.** Production of the petrochemicals used to make plastic is the main engine of growth in demand for oil and gas. And most petrochemicals are used for plastics. By 2025, the amount of plastic produced annually is projected to exceed 2015 levels by 40% — and more than 40% of that plastic is for disposable packaging.

Plastic is not just an eyesore as garbage. Plastic is also responsible for significant greenhouse gas (GHG) emissions at every phase of its life:

-  **Extraction & Transport of Feedstocks:** Pumping and piping the fossil fuels used to make plastic has a huge carbon footprint. GHG emissions come from methane leakage, flaring, clearing land, and burning fuel to extract the oil and gas and get feedstocks to plastic plants.
-  **Refining & Manufacture:** Plastic refining is among the most GHG-intensive manufacturing sectors — and the fastest growing. Most production emissions are from fuel combustion on-site and chemical reactions — emissions that can't be cut by adding renewables to the grid.
-  **Waste Management:** The treatment of plastic waste that isn't lost to the environment has varying emissions impacts. The bulk is landfilled (lowest emissions), recycled (moderate emissions, but displaces new plastics in the market), or — worst for the climate — incinerated (extremely high emissions). Plastic incineration is poised to grow dramatically.

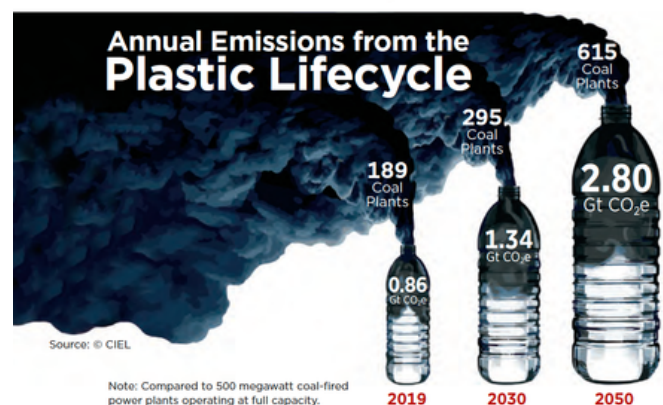


**In the Environment:** The science is new, but it's clear: Whether they're in the oceans, rivers, or on land, plastics releases GHG as they break down. Microplastics in the oceans may also interfere with the ocean's ability to trap carbon.

By 2050, these combined GHG emissions from plastic could reach over 56 gigatons — **nearly 10% of the entire remaining carbon budget.**

**Ambitious action is needed now to stop plastic from accelerating climate breakdown.** Drilling for fossil fuels, producing plastic, and burning waste are endangering health and the environment.

## Emissions from the Plastic Lifecycle



Data from CIEL's report "Plastic & Climate: The Hidden Costs of a Plastic Planet" - May 2019



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**Some approaches to the plastics crisis may look like solutions, but ultimately fail to prevent either the climate or the health harms caused by plastic.** Waste management efforts like ocean cleanups, downcycling, or schemes to turn plastic into fuels do not break the cycle of fossil fuel reliance and GHG emissions. Bio-based or biodegradable plastics cannot replace the enormous scale of fossil plastics without causing their own harms and emissions from land, water, and energy use. Nor do they address the emissions from manufacture and incineration. Proposals to use organisms or chemical processes to break down and remake plastics are expensive and unlikely to work at scale. None of these strategies tackles **the true problem: too much plastic.**

Together, these changes can advance real solutions to the plastic crisis and the climate chaos it is fueling.

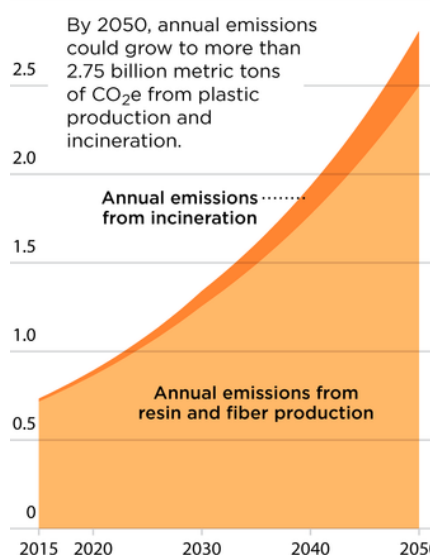
**Addressing plastic's total harms to the climate requires comprehensive reduction: making, using, and throwing away less plastic.** To counter the climate impacts of plastics across their lifecycle, priority measures should:

- Phase-out single-use, disposable plastic (i.e., wrappers, bags, boxes, etc.);
- Stop building new oil, gas, and petrochemical plants, pipelines, or other infrastructure designed to supply plastics production;
- Adopt zero-waste policies to build reusable and refillable systems in cooperation with local government, businesses, and residents;
- Require the companies that make or package their products in plastic to pay for *all* the costs of that plastic, through extended producer responsibility policies;

Adopt and enforce ambitious targets to reduce GHG emissions from *all* sectors, including plastic production.

#### Annual Plastic Emissions to 2050

3.0 billion metric tons



Source: CIEL

Data from CIEL's report "Plastic & Climate: The Hidden Costs of a Plastic Planet" - May 2019

The full report is available online at [www.ciel.org/plasticandclimate](http://www.ciel.org/plasticandclimate)