

## CALIFORNIA CLIMATE POLICY FACT SHEET: PLASTICS

California's landmark environmental laws, including [Assembly Bill 32](#) (Health & Safety Code § 38500 et seq.), have set the state on a path to achieve technologically feasible and cost-effective greenhouse gas (GHG) emission reductions. While California has made significant GHG emission reduction efforts across a variety of sectors, such as its [Advanced Clean Cars](#) and [Climate-Smart Agriculture](#) programs, the state has yet to address emissions from plastic products at a similar scale. Plastic products are largely derived from fossil fuel sources and have very carbon-intensive lifecycles—from creation to distribution to disposal, each process releases GHGs. This California Climate Policy Fact Sheet provides a foundational understanding of initial statewide efforts to mitigate the climate impacts of plastics, including innovation through manufacturing and recycling, as California works towards reducing emissions from the lifecycle of these products.

### Understanding Plastic and Its Climate Impact

Every stage in the plastic product lifecycle produces GHG emissions. The overwhelming majority of plastic products (i.e. synthetic organic polymers), are [created from](#) petroleum and natural gas, which are produced through emission-intensive extraction and distillation processes. Transportation of these feedstocks, manufacture of plastics, and disposal of those products—whether through dumping, incinerating, recycling, or composting for certain plastics—are responsible for additional emissions, [potentially equaling](#) those of hundreds of coal-fired power plants according to some sources. And even in the face of ambitious recycling programs, the majority of plastics are [not recycled](#)—contributing to increased emissions from new production and consumption, as well as the worldwide plastic waste problem.

A world without plastics seems unfathomable, yet their mass production and use [only dates back to](#) the middle of the twentieth century. The largest market for plastics is packaging, which accelerated due to a global shift from reusable to single-use containers and the increased durability of plastic as a material. If current global plastics production processes were to continue, the GHG emissions from plastics would reach [nearly 15 percent](#) of the global carbon budget by 2050. Global oil and gas producers, facing potential reduction in use of fossil fuels for transportation and power generation, are [increasingly turning](#) to plastics as a market for their carbon-intensive hydrocarbon products.

### California Plastics Regulation

Nearly all of California's current plastic regulation is administered through the Department of Resources Recycling and Recovery ([CalRecycle](#)). Through initiatives like the [Integrated Waste Management Act](#) and the [Beverage Container Recycling and Litter Reduction Act](#), CalRecycle aims to reduce waste, recycle and reuse products as much as possible, and improve environmentally-sound disposal practices. Regarding plastics, CalRecycle works to reduce the lifecycle emissions from these products. Through efforts like the [Recycled Fiber, Plastic, and Glass Grant Program](#), which expands existing capacity within the state to use postconsumer recycled fiber, plastic, or glass to manufacture products, and the [Extended Producer Responsibility](#) initiative, which places shared responsibility for end-of-life product management on producers to encourage design changes that minimize health and environmental impacts, CalRecycle aims to create a setting where producers and consumers recognize and respond to the environmental impacts of plastic products. However, at this time California does not regulate the fossil fuel content of plastics, which is one of the most significant contributors to their environmental harms.

### **Evolution of California Plastics Policies**

In recent years, California has addressed plastic products and subsequent waste in a piecemeal fashion, such as with decreases in the use of single-use plastic carryout bags. Recently, the focus in the state legislature has shifted, and California has begun to focus on a more holistic approach—reducing waste, decreasing pollution, reducing GHG emissions, creating markets for recyclable materials, and supporting in-state recycling infrastructure. These efforts include:

- [Assembly Bill 341](#) (Public Resources Code § 41730 et al.) directed CalRecycle to examine existing efforts and propose strategies to reduce the amount of solid waste going to landfills by 75 percent by 2020.
- [Senate Bill 270](#) (Public Resources Code § 42280 et seq.) implemented a statewide plastic bag ban where most stores are no longer able to provide single-use plastic carryout bags to their customers but may provide a bag to customers at the point of sale for a fee.
- [Assembly Bill 888](#) (Public Resources Code § 42360 et seq.) prohibits the sale of personal care products, such as soap, shampoo, and toothpaste, that contain plastic microbeads. The ban took effect on January 1, 2020.
- [Assembly Bill 1162](#) (Public Resources Code § 42372 et seq.) prohibits lodging establishments from providing small plastic bottles containing shampoo, hair conditioner, and bath soap to guests.
- [Senate Bill 54](#) (Allen, 2019, Active) would require CalRecycle to examine plastic products holistically and develop an approach to meet state goals, reduce waste, reduce environmental impacts, and help develop domestic markets for recyclable materials and in-state recycling infrastructure.

### **Key Outcomes and Next Steps for Plastics in California:**

Global plastics production has [quadrupled](#) over the past four decades, with half of all the plastic ever produced manufactured in the [past 13 years](#). Additionally, only [18 percent](#) of global plastic waste is currently recycled and about [58 percent](#) goes to landfill. California has begun to address the production, use, and disposal of plastic, yet significantly more effort will be needed to reduce the carbon-intense lifecycle of these products. For example, CalRecycle has initiated efforts to explore the [scientific and economic](#) implications of using biobased and degradable plastics for packaging materials, but developing the proper disposal techniques and systems will pose ongoing challenges.

Multiple approaches may make the lifecycle of plastics more environmentally friendly. A [2019 analysis](#) from the California Energy Commission identified electrification of plastics production as a key long-term decarbonization strategy. But the most [significant reduction of emissions from the lifecycle of plastics](#) may involve biobased plastics entirely produced by renewable energy, recycling of all plastic waste, and reducing the overall demand for new plastics. Developing a state standard to reduce the use of and demand for fossil fuel-derived plastics—similar to the state’s [Low Carbon Fuel Standard](#) for transportation fuels—could help drive a market transformation to promote this transition.