

Tobacco Product Waste

The Problem

Tobacco Product Waste (TPW) is the number one most littered product worldwide with an estimated four and a half trillion cigarette butts entering the environment each year (Litter Free Planet, 2009). TPW includes cigarettes, cigars, cigarillos, and electronic smoking devices and components. When TPW is discarded in the environment, it leaches thousands of chemicals, including fifty different carcinogenic chemicals (Puls, 2011).

Costs of Tobacco Product Waste

TPW endangers children as the American Association of Poison Control Centers reported about 12,600 cases of children ingesting cigarettes or cigarette butts from 2006 to 2008 (Novotny, 2011). The California Department of Transportation estimates that it costs \$41 million annually to clean up cigarettes on roadways. In 2009, the City of San Francisco spent nearly \$10 million on cigarette butts cleanup alone. In March 2019, the Alameda County Downtown Streets Team audited a 2-mile strip of roadway which is already cleaned 3 times per week and still found over 1,000 cigarette butts.

The Product

TPW is known to contain chemicals harmful to the environment, including pesticides, herbicides, insecticides, fungicides, and rodenticides. Scientific evidence reveals that hazardous materials such as acetate/rayon, pesticides, heavy metals, nicotine, ethyl phenol for flavoring, adhesives, and other additives are acutely toxic to aquatic life when tested at various exposures (Novotny, 2014; WHO, 2017). Researchers Song et. al (2017) found that 3,284 citations and internal tobacco documents strongly suggest that acetate filter ventilation has contributed to the rising lung adenocarcinomas because they:

1. Alter tobacco combustion, increasing smoke toxicants; and
2. Allow for elasticity of use so that smokers inhale more smoke to maintain their nicotine intake; and
3. Cause a false perception of lower health risk from “lighter” smoke.

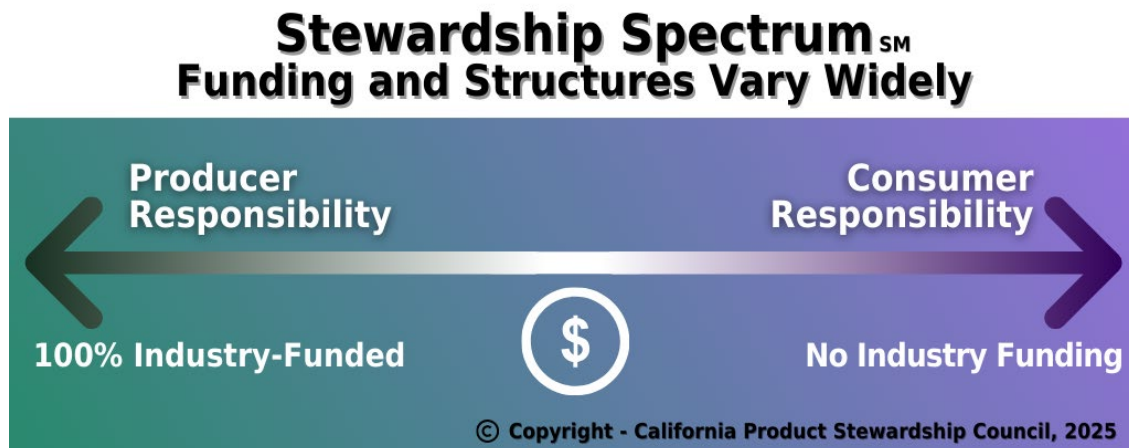
Additional studies have shown chemicals that leach from cigarette butts can also be acutely toxic to aquatic organisms and the surrounding ecosystem (Novotny, 2014).

Another rising tobacco product is electronic smoking devices, such as e-cigarettes, e-cigars, e-pipes, vape pens, and e-hookahs. Electronic smoking devices pose an additional human health risk, as explosions have been documented during use and disposal of the devices, some resulting in death (Molina, 2019). From 2015 to 2017, there were an estimated 2,035 e-cigarette explosion and burn injuries reported in U.S. hospital emergency departments (Rossheim, 2018).

Electronic smoking devices, including e-cigarettes, e-cigars, e-pipes, vape pens, and e-hookahs, are a growing source of both health and environmental risks. Many contain lithium-ion batteries, which pose fire hazards, and explosions during use or disposal have resulted in injuries and deaths (Molina, 2019). From 2015 to 2017, U.S. hospital emergency departments treated an estimated 2,035 e-cigarette explosion and burn injuries (Rossheim, 2018).

Single-use vapes, designed for one-time use, further exacerbate tobacco product waste, contributing to plastic pollution, toxic chemical leaching, and improper battery disposal, making them a significant emerging concern for waste management and environmental health. In the UK alone, approximately 1.3 million disposable vapes are discarded each week, resulting in nearly 22,000 pounds of lithium from e-cigarette batteries ending up in landfills annually. This improper disposal threatens waterways with toxic nickel, cobalt, and organic solvents, further underscoring the environmental risk posed by these devices (Shearing, 2023).

The Solution: Policy and Legislation for Tobacco Product Waste in California



The image illustrates the **Stewardship Spectrum**, which highlights the range of funding and structural models for product stewardship programs. The spectrum emphasizes how responsibility for funding stewardship programs can vary widely between producers and consumers. Advocacy groups urge producers to fund, operate, and promote convenient end-of-life collection programs, especially for hard-to-manage products like tobacco and single-use vapes.

AB 2440 (Irwin) and SB 1215 (Newman) – Enacted into law in 2022

[AB 2440 \(Irwin\)](#) was enacted in 2022 and aims to reduce battery waste in California by requiring battery producers to create or fund a stewardship program for collecting and recycling batteries sold in California.

[SB 1215 \(Newman\)](#) was passed in 2022 and amends the Electronic Waste Recycling Act (EWRA) of 2003 to include covered battery-embedded products to the CEW Recycling Program. Covered battery-embedded products are defined as a product that contains a battery that is not designed to be easily removed by the user with no more than commonly used household tools.

Both of these bills are significant steps in managing battery and electronic waste in California. This indirectly helps address the environmental impacts of electronic tobacco waste products. However, a comprehensive solution for toxic tobacco waste requires additional extended producer responsibility measures beyond these laws.

Cannabis Waste Regulation

Starting July 1, 2024, [AB 1894 \(Rivas\)](#) created new requirements for cannabis cartridges and integrated vaporizers. Advertising and marketing must include specific disposal messages: for cannabis cartridges, ads must state that they should be disposed of as hazardous waste at an approved facility, while integrated vaporizers must include a similar message about hazardous waste disposal. Additionally, packaging and labeling cannot imply that these products are disposable or suitable for regular trash or recycling. Licensees must swiftly move any existing non-compliant products through the supply chain, as the Department of Cannabis Control will provide support to help ensure compliance. These regulations are designed to promote proper disposal and minimize environmental impact.

Research & Relevant Articles

- [Study Finds That Vast Amounts of Waste Are Caused by Single-Use E-Cigarette Batteries](#) – University of Oxford, 12/14/23
- [Producer Responsibility Policy Options for Tobacco Waste](#) – California Product Stewardship Council, White paper funded by the California Department of Public Health, Tobacco Control Program, June 2019
- [Cigarette Waste: New Solutions for the World's Most-littered Trash](#) – The Revelator, 6/23/19
- [Vape Pods Are The New Cigarette Butts, For Colorado, That's a Whole New Trash Problem](#) – CO Public Radio, 5/16/19
- [Cigarette Filters are the No. 1 Plastic Pollutant... and Don't Prevent Cancer](#) – CNN, 1/24/19
- European Parliament (October 24, 2018). Plastic Oceans: MEPs back EU ban on throwaway plastics by 2021. Plenary Session Press Release. Accessed at: <http://www.europarl.europa.eu/news/en/press-room/20181018IPR16524/plastic-oceans-meps-back-eu-ban-on-throwaway-plastics-by-2021>