

Vaping Safety & Sustainability

Strategies for Fire Departments



Problem

No solution for vapes that get thrown away. How can we recycle vapes? How can we create a solution for vape waste and recycling?

How many vapes are thrown away?

Approximately 5 vapes are thrown away every second, totalling to about 300 vapes a minute. In the United States, the Bureau of Investigative Journalism stated that about 150 million vapes

are thrown away each year. According to the United Nations, about 844 million are thrown away each year, globally.

What are the human rights implications of mining lithium batteries?

Indigenous People Exploitation: Many lithium reserves are located on or near Indigenous lands, especially in South America's Lithium Triangle (Argentina, Bolivia, and Chile) causing displacement, loss of water resources, and environmental degradation without proper consultation or compensation.

Water Scarcity: In Chile, lithium operations have exacerbated drought conditions, threatening local agriculture and traditional livelihoods, chemical leaks from lithium processing can contaminate groundwater.

Labor Right Violation: linked to poor working conditions, low wages, and lack of safety regulations, child labor in associated industries.

What are the environmental implications caused by vapes?

Pollution: disposable vapes contain lithium-ion batteries which can leak toxic chemicals into the environment if not disposed of properly.

Plastics: many disposables are made of plastic which does not biodegrade easily.

Chemical leaks: liquid cartridges and pods contain nicotine, heavy metals, and harmful chemicals that contaminate soil and water if not disposed of properly.

Air pollution: vaping does release fewer toxic chemicals than smoking but still emits aerosols that contain VOC's (volatile organic compounds) which can contribute to pollution.

Nicotine is toxic: Liquid nicotine in e-cigarettes can be easily absorbed by the skin, potentially causing nicotine poisoning with symptoms that include difficulty breathing, fainting, or seizures. Nicotine can also harm fish and other aquatic organisms.

What are the fire harms caused by vapes?

Battery Hazard: vape batteries can be fire hazards in landfills and recycling centers if not handled correctly, this can cause large fires or explosions.

Disposal: Improper disposal of vapes and vape batteries can cause fires.

Lithium batteries can catch fire, especially when damaged. When placed in household trash and recycling bins, lithium batteries often get damaged by trash compactors and can cause fires during transportation and at waste and recycling facilities.

Explosions: caused by overheating, short circuits, or improper charging.

Injuries: exploding vapes can cause severe burns.

Spontaneous Combustion: large quantities of vapes that are stored improperly can overheat if exposed to sunlight or high temps.

Proposed Solutions

What has the UK done? How can we follow their footsteps to reduce vape waste and recycling?

Derby Vape Recycling Bin: an environmentally friendly solution for the disposal of used vapes in outdoor public areas.

Vape Collection Points: collection points across the UK including nearly 200 participating vape shops and municipal eco-centres

Retailer participation: UK has comprehensive recycling schemes for single use disposable devices from companies RELX and FEELM

Ban on Disposables: to reduce vaping in youth the UK has a ban on disposable vapes effective June 1, 2025.

What is the proven and predicted effectiveness of the solution outcomes?

Oxfordshire's vape recycling scheme collected over two tons of disposable vapes in one year, proving that these programs can make an impact.

Efforts still remain limited in broader UK regions, plans to expand vape collection bins to less busy areas, only 17% of vapes are being properly recycled.

This is a NEW initiative that the UK is still working on, trial and error is expected.

Surveys indicate that 77% of vape users do not know how to recycle vapes, education on the topic is important and promotion of vape collection bins.

Starting June 2025, **disposable vapes will be banned in the UK**, eliminating the 5 million vapes being discarded weekly and reducing environmental harm and hazards.

Any Questions?

For more information on vaping and tobacco prevention programs contact Dr. Nicolas Polanco at npolanco@latinoconnection.org



Facts



Potential Challenges: may cause rise in black market vape sales, users may still want to switch to rechargeable vapes, which last longer but still need proper disposal.



Strict enforcement of regulations must happen to ensure compliance.

17%-50%

Predicted Outcome: if all of the initiatives are successful, the UK could increase their recycling rates from 17% to 50% or higher.

Over 700



In the UK, over 700 fires in waste centers annually are caused by lithium ion batteries, including those from vapes.