COMMISSION FOR ENVIRONMENTAL COOPERATION

Plastics Waste Management in the US and Canada

Key Insights

This fact sheet focuses on post-consumer plastics waste from residential and commercial sources, specifically from the four largest applications of plastics in the US and Canada by tonnage: packaging, electronics, construction and demolition, and vehicles.

Plastics in Packaging

Plastic packaging (such as bottles, bags, films, containers, etc.) represents the largest use of plastics in both the US and Canada.

In the US in 2021, approximately **21 million tonnes** of plastic packaging waste were generated, with **11% collected for recycling**.

In Canada in 2020, approximately **2 million tonnes** of plastic packaging waste were generated, with **25% collected for recycling**.

Across the US and Canada, the majority (nearly 90%, over 18 million tonnes) of plastic packaging waste were not collected for recycling, representing the first limiting factor to domestic circularity.

Other key barriers to plastic packaging circularity include, but are not limited to:

- Limited use of recycled plastic relative to the high use of virgin plastic, due to low cost and availability. Recycled plastic is also limited in quality, supply and market volatility.
- The inadequate collection systems currently in place result in low recycling collection rates. Furthermore, plastics collected for recycling are often of low quality due to contamination, and this results in additional costs for separation prior to processing.
- Limited infrastructure for sorting out and processing multi-material, flexible plastics without incurring contamination problems.

Plastics in Electronics

Waste Electrical and Electronic Equipment (WEEE), also known as electronic waste (e-waste), includes a wide range of products, such as household appliances, computers, televisions, phones, lighting, electronic tools and much more. Plastics content in WEEE is estimated at 20% to 33%, varying depending on the type of electronic item.

In the US in 2018, approximately **2.3 million tonnes** from WEEE were generated, of which **13% was recycled**.

In Canada in 2019, approximately **450,000 tonnes** waste from WEEE were generated, of which **4% was recycled**.

Depending on the condition of the product, some WEEE can be refurbished or reused, thus extending the product's lifetime. The heterogeneous combination of plastic types, along with the variation in fastener styles, paints and molded-in metal parts, makes WEEE recycling difficult. Recycling is often further complicated by the presence of toxics and hazardous substances. As such, much of WEEE is either landfilled or exported, although the number of countries that are still willing to accept shredded mixed plastic waste from EEE waste recyclers is decreasing.





Plastics in Construction and Demolition

Construction and demolition (C&D) waste includes discarded building materials, packaging and rubble generated during building and structure construction, renovation and demolition. An estimated 1% of C&D waste is plastic. Modern building methods are increasingly using plastics so it is likely the percentage of plastic in future C&D waste will increase.

In the US in 2018, approximately **5.4 million tonnes** of plastic waste from C&D were generated, of which **2% was recycled.**

In Canada in 2019, approximately **1.5 million tonnes** of plastic waste from C&D were generated, of which **3% was recycled.**

C&D waste either goes to sorting centers or directly to landfill. Separation and recovery of plastics specifically within C&D materials at end-of-life is challenging as building demolition typically produces mixed waste with low fractions of plastics. Further complicating the situation, C&D waste is often contaminated with paint, adhesives, or fasteners and potentially toxins.

Plastics in Vehicles

Plastics in automobiles have increased over the past decade, making up an estimated 9-14% of the material weight of passenger vehicles.

In the US in 2020, approximately **3.5 million tonnes** of plastic waste from EOL vehicles were generated.

In Canada in 2020, approximately **970,000 tonnes** of plastic waste from EOL vehicles were generated.

Most cars are sold on the secondhand market before being dismantled for recyclable or reusable parts. Currently, it is more cost-effective and less labor-intensive to crush and shred vehicles or appliances for metal recycling rather than dismantling them for parts, including plastic parts. The absence of end markets for the plastic material in cars, which are often blends or potentially contaminated by automotive fluids and additives, reduces the incentives for recyclers to explore this avenue.

Looking Forward

There are a range of policy approaches and waste management practices to help overcome the barriers to plastics circularity in the US and Canada across sectors.

The study's key recommendations that could increase the circularity of plastics include:

- Redesign plastic packaging and products for reuse, refill and other source reduction strategies.
- Enhance collection systems, harmonizing materials that can be recycled across jurisdictions, where possible.
- Expand plastic recycling infrastructure, including investment in advanced sorting and processing technologies.
- Enact policy approaches such as "extended producer responsibility" (EPR) and deposit-refund systems (DRS) to improve plastic waste management across the value chain.
- Stimulate demand for recycled resin across sectors, via regulations (e.g., recycled content mandates).
- Targeted strategies for sectors like electronics, vehicles and C&D waste that encourage longer product lifetimes, reuse and refurbishment, and design for disassembly.

The Commission for Environmental Cooperation (CEC) milestone studies on recycling and solid waste management in North America support Canada, Mexico and the United States in adopting circular economy and sustainable materials management approaches with the aim of increasing the reuse, recovery and recycling rates of paper, plastic and bioplastic waste.

Interested in these studies? Explore the complete recycling and waste management series for the US, Canada and Mexico.

Visit our Sustainable Living and Economies page to learn more about the Circular Economy in North America.