THE

ECONOMIC IMPACT

OF PLASTICS RECYCLING

Jobs, Output, and Opportunity from Expanding U.S. Recycling Infrastructure

AMERICA'S PLASTIC MAKERS®
MAKING SUSTAINABLE CHANGE

American® Chemistry Council

Executive Summary

Plastics are foundational to the U.S. economy, supporting industries from healthcare and construction to packaging and transportation. Their versatility, durability, and cost-effectiveness have made them indispensable in modern life, from medical devices and electric vehicles to energy-efficient building materials.

Valuable plastic materials have tended to follow a linear model of "make, use, dispose," resulting in large amounts being sent to landfills. To address this challenge, the U.S. needs to transition from a linear economy to a circular economy, where plastics are reused, recycled, and reintegrated into the value chain.

This transition would represent a major economic opportunity.

A new analysis by the American Chemistry Council (ACC) finds that if just 50% of plastics in municipal solid waste stream were diverted from landfills to recycling facilities, the economic benefits could be substantial:

173,200
JOBS

including:

43,300
direct jobs in the recycling industry

61,300
supply chain *(indirect)* jobs

68,600
payroll-induced jobs supported by workers in the recycling industry and their supply chains spending their earnings

$48.7
BILLION

in annual U.S. economic output

including:

$16.4 BILLION
in materials generated by the recycling facilities

$32.3 BILLION
in additional supplier and payroll-induced impacts

$12.8
BILLION

in annual payroll

including:

$2.9 BILLION
in direct effect

$5.3 BILLION
in indirect effect

$4.6 BILLION
in payroll-induced effect

Recycling, both traditional and advanced, is central to this transformation. Mechanical recycling has long been the primary method of recycling plastics, but advanced recycling technologies present an opportunity to process a broader range of plastics.

ACC's findings highlight the opportunity to reduce the amount of plastic that is landfilled while promoting economic growth. With continued investment and supportive policy, expanding both traditional and advanced recycling can help the U.S. achieve a more sustainable and circular economy.

Introduction

Plastic recycling is a critical component of the transition from a linear economy to a circular economy that prioritizes recycling and reuse of valuable plastic materials that might otherwise be discarded.

While mechanical recycling, a process where plastic waste is converted *(generally by shredding or grinding)* into primary raw materials or other plastic products without changing the chemical structure of the material, has been the primary recycling method for decades, less than 10% of plastics are recycled.

To significantly increase recycling rates and reduce plastic sent to landfills, the U.S. must expand both mechanical and advanced recycling. Advanced recycling *(also known as chemical or molecular recycling)* technologies extract value from used plastics by converting them into their original building blocks which can then be used to create new products.[1] Complementing existing mechanical recycling processes, advanced recycling technologies allow more types of used plastics to be manufactured into new plastics and products.

Many manufacturers are already taking advantage of advanced recycling technologies and recycled plastic materials, and several global brands have incorporated recycled plastic into their products. Over the past decade, billions of dollars have been committed to building new recycling infrastructure across the U.S.. The growth potential for the recycling industry—and the subsequent diversion of used plastics from landfills—is substantial.

This report presents the results of an analysis conducted by the American Chemistry Council (ACC) to quantify the potential economic impact of expanding capacity. **The findings demonstrate that scaling up all forms of recycling could generate tens of thousands of jobs, contribute billions to the U.S. economy, and divert millions of tons of plastic from landfills each year.**

[1] Examples of advanced recycling technologies include pyrolysis, gasification, and depolymerization.

Economic Impact

OBJECTIVE

The objective of the analysis was to quantify the potential economic impact of expanding plastic recycling capacity through both mechanical and advanced technologies. **These impacts generally manifest through the following channels:**

Direct Impacts

Jobs, payroll, and output value generated by the recycling industry itself.

Indirect/Supplier Impacts

Economic activity, including employment and output, in supply chain industries that support the recycling industry.

Payroll-Induced Impacts

Jobs and output supported by the household spending of those employed directly or indirectly by the sector *(e.g., employees, both direct and indirect, purchase groceries, use medical facilities, etc.)*.

The analysis on indirect and payroll-induced employment and other economic effects was conducted using IMPLAN (www.implan.com).

POTENTIAL ECONOMIC IMPACT

Post-use plastics are a valuable and highly underutilized resource. Assuming 50% of plastics *(estimated at 20.0 million metric tons, or 44.1 billion pounds, annually)* in the municipal solid waste stream *(not already being recycled)* could be diverted to, and processed by, recycling facilities, the economic impacts could be significant.

According to ACC estimates, the output and employment generated by the recycling industry and supply chain industries could be significant: In addition to $16.4 billion in output and 43,300 skilled jobs generated directly by the recycling industry, the industry's activity and employees would generate purchases of raw materials, services, and other products throughout the supply chain. Thus, another 61,300 indirect jobs could be supported by the ongoing operations of recycling facilities; the output of this indirect activity would contribute an additional $17.8 billion to the economy. Finally, the wages earned by workers throughout the supply chain *(direct and indirect)* would be spent on household purchases, services and taxes. In turn, the response of the economy *(payroll-induced effects)* is estimated to result in an additional 68,600 jobs and $14.5 billion in economic activity.

All told, the $16.4 billion in direct output from the recycling industry could generate more than three times that amount in total annual output to the economy. These benefits would be distributed across local communities, supporting economic development while reducing environmental impact. The following table summarizes the projected economic impacts:

Total Economic Impact of Expanded Advanced and Mechanical Recycling Capacity

	EMPLOYMENT	PAYROLL ($B)	OUTPUT ($B)
Direct Effect	43,300	2.9	16.4
Indirect Effect	61,300	5.3	17.8
Payroll-Induced Effect	68,600	4.6	14.5
Total Effect	**173,200**	**$12.8**	**$48.7**

Conclusion

Recycling, both mechanical and advanced, is fundamental to reducing plastic waste and promoting a circular economy. As innovation continues to expand the capabilities of recycling technologies, the U.S. is presented with a significant opportunity to transform plastic waste into economic value.

Advanced recycling, in particular, represents a scientific and technological leap forward. By converting used plastics into their original building blocks, these technologies complement mechanical recycling and enable the reuse of materials that might otherwise be landfilled. This not only reduces environmental impact but also strengthens domestic supply chains and supports manufacturing resilience.

The potential economic effects of more comprehensive plastics recycling are substantial.

If 50% of plastics in the municipal solid waste stream were diverted to recycling, the U.S. could see:

173,200	$48.7	$12.8
NEW JOBS	BILLION	BILLION
INCLUDING DIRECT, INDIRECT, AND PAYROLL-INDUCED EMPLOYMENT	IN TOTAL ECONOMIC OUTPUT	IN ANNUAL PAYROLL

These figures underscore the powerful role that recycling can play in driving sustainable economic growth. With continued investment, supportive policy frameworks, and industry collaboration, the U.S. can scale up recycling infrastructure, reduce plastic waste, and unlock long-term economic and environmental benefits.

Methodology

This analysis is based on an industry-wide model developed by the ACC. To construct the model, ACC collected and analyzed publicly available data for existing and planned mechanical and advanced recycling facilities. The model is intended to be representative of the recycling industry but is not reflective of any one individual company, facility, or technology.

To estimate the potential economic impacts of increased recycling, the analysis assumes 50% of plastics generated in the municipal waste stream could be diverted to either mechanical or advanced recycling facilities. While 50% is a significant increase compared to current plastics recycling rates, it aligns with the EPA's National Recycling Goal to increase the national recycling rate to 50% by 2030 and supports the plastic industry's goal that 100% of U.S. plastic packaging is reused, recycled or recovered by 2040.

To model a more comprehensive plastics recycling system, a scenario was developed based on current plastic-to-landfill data that projects how plastics diversion could be split between mechanical and advanced recycling technologies. Under this scenario, of the 50% of plastics diverted to recycling facilities, 40% would be diverted to mechanical recycling and 60% would be directed to advanced recycling.

It is important to emphasize that this analysis considers all plastics — not just packaging materials like water bottles, detergent containers, and milk jugs, which the existing recycling system primarily targets today. In this model, mechanical recycling would expand significantly and advanced recycling technologies would complement this growth by processing the remaining materials that mechanical systems cannot efficiently handle, including durable goods such as clothing, automotive parts, healthcare products, and some films and flexible plastics that are currently difficult to mechanically recycle. This scenario reflects a more holistic and realistic approach to managing the full range of plastics used across the economy.

To determine the volume of plastic that could be diverted to recycling facilities, ACC estimated the current volume of material solid waste generated and the plastics share of the total, using data from EPA's *Advancing Sustainable Materials Management: 2018 Tables and Figures* (2020) and growth projections from *The Global Waste Management Outlook*, published jointly by the UN Environment Programme *(UNEP)* and the International Solid Waste Association *(ISWA)*.[2,3]

NOTE

ACC has previously published analyses on the potential economic impact of recycling in the United States: *Economic Impact of Plastics-to-Oil Facilities in the U.S.* (October 2014), *Economic Impact of Advanced Plastics Recycling and Recovery Facilities in the U.S.* (February 2019), and *The Potential Economic Impact of Advanced Recycling and Recovery Facilities in the United States* (April 2022). These analyses were focused on advanced recycling technologies. As recycling technologies have evolved, so has ACC's methodology and assumptions, which are based on factors such as current market conditions, changing industry dynamics, and availability of data. As such, results presented in this analysis are not directly comparable to the results from previous analyses.

[2] https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management
[3] https://www.greenpolicyplatform.org/initiatives/global-waste-management-outlook/About

ACC's Economoics & Data Analytics Department

The Economics & Data Analytics department provides a full range of statistical and economic analysis and services for ACC and its members and other partners. The group works to improve overall ACC advocacy impact by providing statistics on American Chemistry as well as preparing information about the economic value and contributions of American Chemistry to our economy and society. They function as an in-house consultant, providing survey, economic analysis, and other statistical expertise, as well as monitoring business conditions and changing industry dynamics. The group also offers extensive industry knowledge, a network of leading academic organizations and think tanks, and dedication to making analysis relevant and comprehensible to a wide audience.

The lead author of this report was Heather Rose-Glowacki.

DISCLAIMER

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- Constant byproducts coefficients
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- Time Delineated