Developing Effective and Efficient Markets for Recycled Materials

U.S. Environmental Protection Agency

Challenge: Develop innovative digital solutions that connect domestic recycling facilities with manufacturers to enhance recycling markets and increase the use of recycled materials in new products.

Executive champion: Kathleen Salyer, Acting Director, Office of Resource Conservation and Recovery, U.S. Environmental Protection Agency

Background: Recycling facilities, ranging from those operated by large waste management corporations to smaller, family-owned facilities, process the nearly 70M tons of material that Americans throw into their recycling bins each year. While international markets were historically significant purchasers of materials from these U.S. recycling facilities, recent years have seen tightening of international markets, due largely to contamination of traditional recycling streams by newer products (e.g., plastic bags, flexible pouches, and lithium batteries), which our outdated recycling infrastructure is ill-equipped to manage. Many recycling facilities are unable to fill the gap left by international markets, as they are not connected to domestic manufacturers (e.g., paper mills, bottling plants) that have demand for using these recycled materials in new products. These dynamics have contributed to recycling programs across the country shrinking or even shutting down.

Why this problem matters: While surveys indicate that the vast majority of Americans support recycling, the U.S. recycling rate has stagnated, with consumers recycling only 34-35% of household waste, in part due to facilities reducing the breadth of materials they accept or closing their doors altogether. Despite these challenges, recycling can help American industry to compete on the world stage while also reducing manufacturing's impact on ecosystems and creating jobs. Recycling provides households and businesses with an accessible destination for their waste materials, reducing environmental impacts, and generating economic benefits for communities. Recycling is key to maintaining domestic materials supply chains without increasing environmentally impactful activities like mining and refining. During the 20th century, global raw materials use rose at twice the rate of population growth, with raw material usage currently accounting for 42% of all U.S. greenhouse gas emissions. Recycling is also a vital source of jobs – more than 750,000 Americans work in the recycling industry, and millions more work in manufacturing industries supported by recycled feedstocks. Connecting recycling facilities to domestic manufacturers would not only reinvigorate the existing system but also illustrate to recycling facilities that there are proven use cases for some of the materials that our system cannot currently accommodate, which could spur investment into the recycling infrastructure and limit contamination, thereby improving our supply of recycled materials.

Vision for sprint outcomes: By enhancing connections between those processing recycled materials and those interested in purchasing these materials, there will be more demand for recyclables, leading to a stronger and more resilient recycling system in the U.S.

Target end users: U.S. recycling facilities and manufacturers looking to produce, sell, and buy quality recycled materials; rural or tribal communities; organizations and state and local governments striving to improve their recycling facilities and infrastructure.

Related open data sets:

- **EPA annual report Advancing Sustainable Materials Management** (link)
- **EPA's Recycling Economic Information report** including the recycling industry workforce (link) and (link)
- **U.S. Geological Survey's annual mineral commodity summaries** - manufacturing industry data on the use of virgin (primary) and recycled (secondary) materials in the U.S. for several dozen minerals (link)
- **Southeast Recycling Development Council's** map of recycling opportunities in the Southeast (link)
- **The Recycling Partnership**'s map of recycling opportunities nationwide (link)
- **Institute of Scrap Recycling Industries** - monthly, quarterly, and annual data on overall and materials-specific recycling industry economics (link)
- **Materials-specific industry trade association data** on recycling and production rates, as well as access to recycling opportunities

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