

# Emerging Markets for Recycled Materials: Global Trends and Domestic Impacts

---

**National Academies Study on Costs and Approaches for MSW Recycling Programs**

**Panel 1: Financing and End Markets of MSW Recycling**

**June 11, 2024**

Joseph C. Pickard

ReMA Chief Economist and Director of Commodities



Recycled Materials  
Association

*Sustainable. Resilient. Essential.*

[recycledmaterials.org](https://recycledmaterials.org)

# ISRI is now ReMA

**The Recycled Materials Association (ReMA)** represents more than 1,700 companies in the U.S. and 40 countries around the globe.

Based in Washington, D.C., ReMA promotes safe, economically sustainable and environmentally responsible recycling through networking, advocacy and education.



Recycled Materials  
Association

*Sustainable. Resilient. Essential.*

# Market Overview for U.S. Recycled Materials

- Recycled commodity markets are subject to many of the same factors that drive primary commodity markets.
- However, recycled and primary commodity markets can diverge in important ways. Recycled commodity prices generally follow traditional open market relationships: prices tend to reflect supply and demand balances.** Primary commodity price volatility, on the other hand, has increasingly been influenced by shifts in investment fund flows, market speculation, algorithm-based trading strategies, and other factors not based on fundamentals.
- Another important distinction between recycled and primary commodity markets is how inventories are managed.** Recycling is generally a high volume, low margin business, where stockpiling inventories for extended periods is not economically viable.
- Residential recycling differs from industrial recycling because the supply is determined by residential collection volumes.** Contracts between material recovery facilities (MRFs) and municipal governments often set the terms for what materials the MRF will collect and at what frequency.
- For the U.S. recycled materials industry, typically 70 percent of demand comes from domestic manufacturers and around 30 percent comes from export sales.**

## Estimated Volume of Recycled Commodities Processed in the United States, 2022

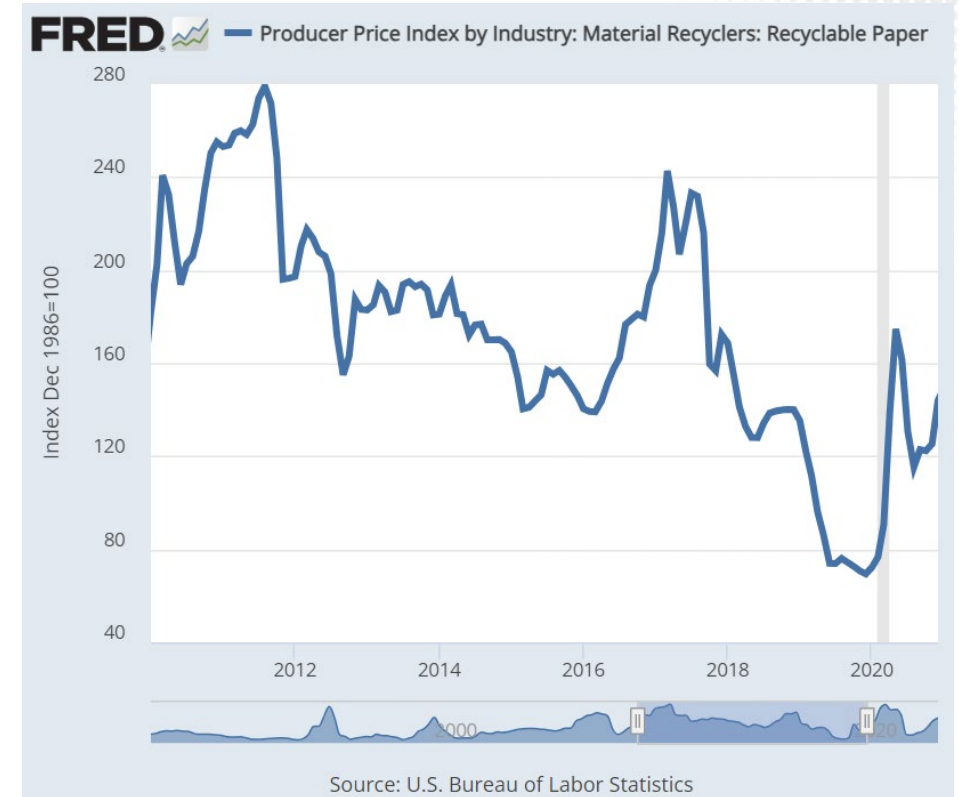
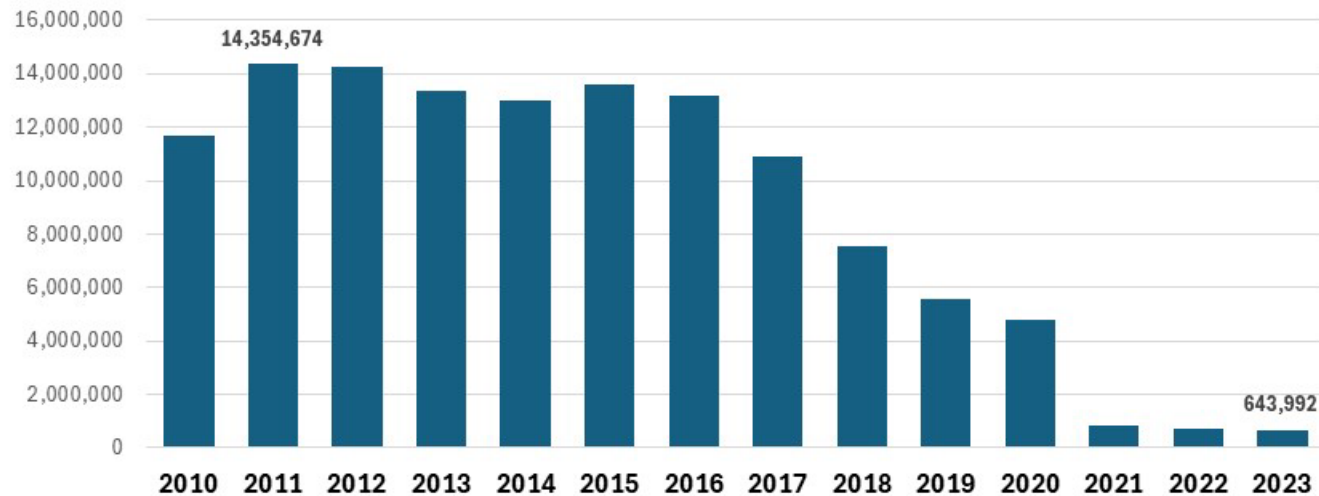
Million metric tons and %	
2022	
<b>Iron and Steel</b>	
	69.5
<b>Nonferrous</b>	
Aluminum	5.4
Copper	1.8
Lead	1.0
Nickel	0.2
Zinc	0.3
<b>Recovered Paper and Fiber</b>	
	44.5
<b>Post-Consumer Plastic (2021)</b>	
	2.3
<b>Electronics (Est.)</b>	
	5.5
<b>Other (includes tire &amp; rubber, textiles, glass, etc.)</b>	
	7.0
<b>TOTAL</b>	<b>137.0</b>
<b>U.S. Recycled Commodity Exports</b>	
	37.6
<b>Export share</b>	
	27%

Sources: U.S. Geological Survey; U.S. Census Bureau; U.S. International Trade Commission; American Forest & Paper Association; Stina, Inc.; U.S. Tire Manufacturers Association, ISRI.

# Impacts of Changes in Global Demand: China and Paper

U.S. Exports of Recovered Paper and Fiber to China,  
2010-2023  
Metric tons

Sources: Census Bureau/U.S. International Trade Commission; ReMA.



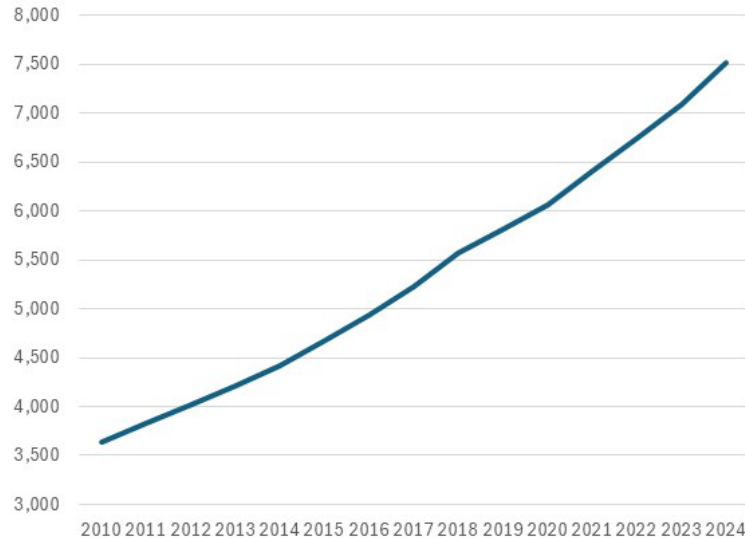
# Determinants of Emerging Market Demand for Recycled Materials

- Economic Growth, Personal Income and Spending
- Industrial Production and Manufacturing Output
- Labor Costs, Technology and Capital Investment
- Domestic Recycling Infrastructure and Policy Landscape
- Location, Transportation Costs and Foreign Exchange Rates
- Trade Restrictions



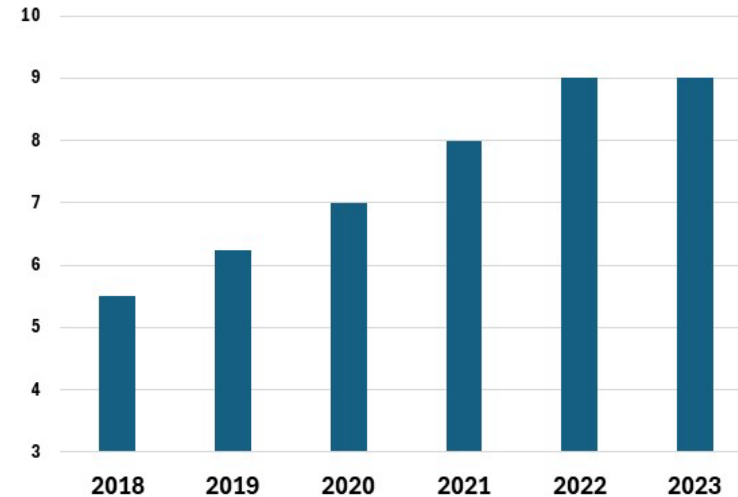
# Example of New Market Development: Bangladesh

**Bangladesh: Per Capital GDP 2010-2024**  
Constant Prices (2017 International Dollar)



**Bangladesh real (adjusted for inflation) per capita GDP has more than doubled since 2010, driving demand for steel and other consumer products.**

**Bangladesh Steel Production 2018-2023**  
Million tonnes



**Critically, increases in steel Bangladesh production due to EAF and induction furnace production that is fed by recycled iron and steel.**

**U.S. Recycled Ferrous Exports to Bangladesh**  
Metric tons and FAS \$ Value



**U.S. exports of recycled iron and steel to Bangladesh up from less than 37,000 mt valued at \$13.8 million in 2010 to 1.7 million tons valued at \$732 million in 2022.**

# Bangladesh Now 3<sup>rd</sup> Largest Export Market for U.S. Recycled Steel

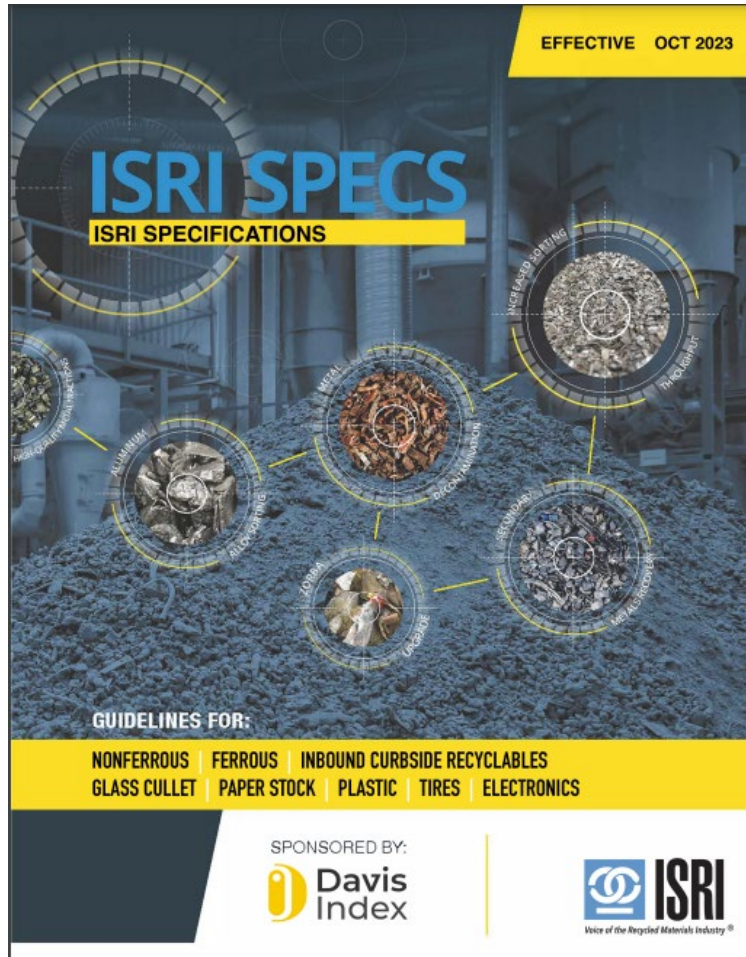
## U.S. Exports of Recycled Iron and Steel (ex- Stainless and Alloy Steel)

Metric tons

Sources: Census Bureau/U.S. International Trade Commission; Recycled Materials Association.

Country	Year 2021	Year 2022	Year 2023	Jan-Mar 2023	Jan-Mar 2024	YTD % CHG
Turkey	3,430,790	3,414,553	4,064,245	976,676	933,558	-4.4%
Mexico	2,646,063	3,054,698	2,821,016	680,544	579,956	-14.8%
<b>Bangladesh</b>	<b>1,355,062</b>	<b>1,656,008</b>	<b>1,444,238</b>	<b>292,784</b>	<b>387,771</b>	<b>32.4%</b>
Taiwan	1,368,977	1,188,388	1,244,290	308,762	299,038	-3.1%
Peru	494,160	661,121	530,320	136,950	187,367	36.8%
India	424,286	1,692,805	1,411,725	240,067	164,611	-31.4%
Pakistan	695,191	525,149	424,505	81,495	157,498	93.3%
Canada	601,118	591,773	610,311	178,392	140,586	-21.2%
Vietnam	1,438,632	857,900	869,218	503,734	114,447	-77.3%
Thailand	275,209	324,710	380,076	123,090	66,715	-45.8%
Greece	298,371	310,461	122,961	29,483	30,771	4.4%
S. Korea	631,211	487,194	355,708	126,010	29,499	-76.6%
Malaysia	1,380,149	143,578	123,280	24,582	26,434	7.5%
All Others	1,652,519	1,125,758	614,554	129,743	33,239	-74.4%
<b>Total:</b>	<b>16,691,738</b>	<b>16,034,096</b>	<b>15,016,447</b>	<b>3,832,312</b>	<b>3,151,490</b>	<b>-17.8%</b>

# Specifications Help to Facilitate Trade



*Internationally recognized guidelines used by buyers and sellers of recycled materials and products –*

- Form the common language used globally for transactions of these materials/products for purposes of recycling.
- Applicable across commodities, sources, and end markets.
- Routinely updated.

***Contains –***

- More than 400 “grades” of recycled materials.
- Preamble language for each commodity with specific terms defined.

**NEW on-line tool: [www.isrispecs.org](http://www.isrispecs.org)**

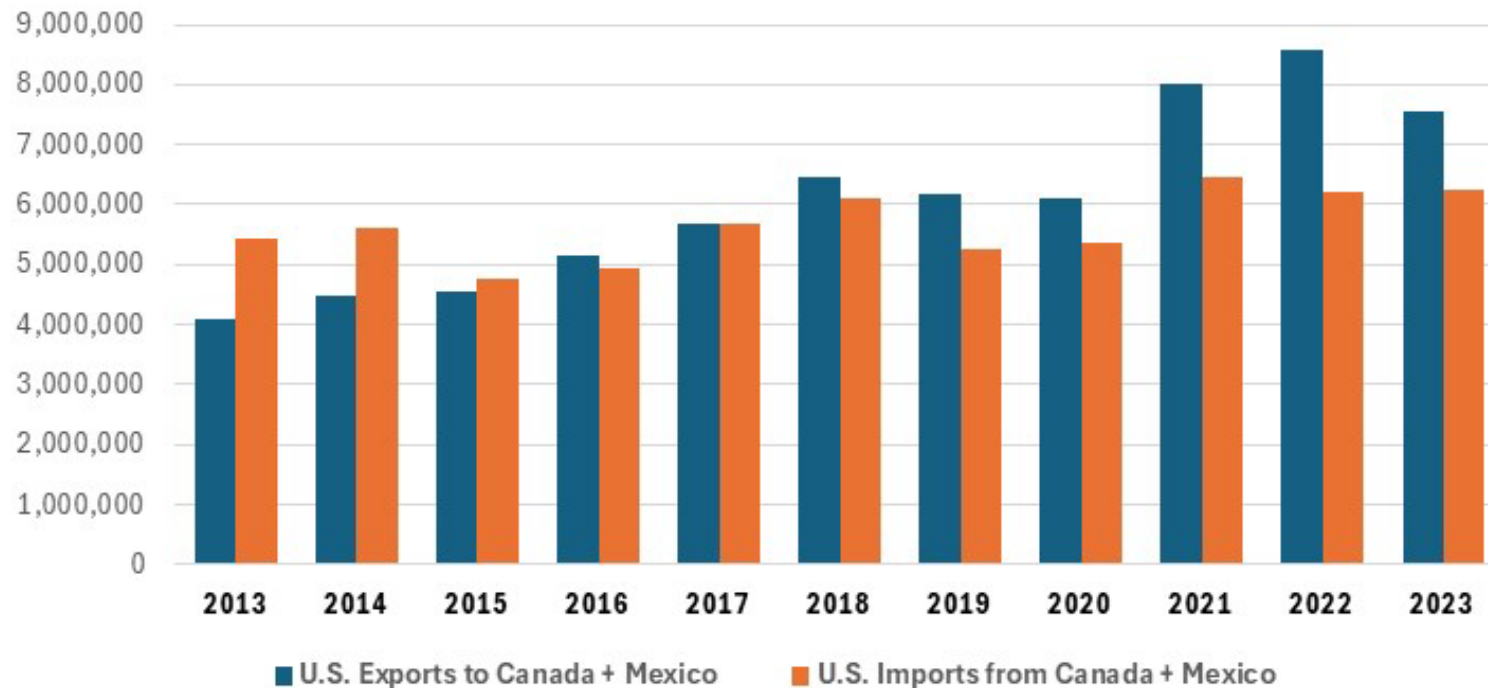


# Key Trends: Supply Chains and Regional Markets

## Trade Flows of Recycled Materials in North America

Metric tons

Sources: Census Bureau/U.S. International Trade Commission; ReMA.



Especially in the post-COVID period, regional markets have become more integrated as firms and governments look to improve supply chain security. Trade flows of recycled materials within North America increased by more than 5 million metric tons between 2013-2023.

# Thank You!

---

**Joseph C. Pickard**

ReMA Chief Economist and Director of Commodities

**[jpickard@recycledmaterials.org](mailto:jpickard@recycledmaterials.org)**

**Office: 202 662 8542**

**Cell: 202 306 5641**



Recycled Materials  
Association

[recycledmaterials.org](http://recycledmaterials.org)