Recycled Materials Association

October 17, 2025

The Honorable Howard Lutnick
Secretary
U.S. Department of Commerce
1401 Constitution Avenue NW
Washington, DC 20230

Re: Request for Public Comments on Section 232 National Security Investigation of Imports of Robotics and Industrial Machinery (XRIN 0694-XC138; BIS-2025-0257)

Dear Secretary Lutnick:

On behalf of our more than 1,700 member companies, the Recycled Materials Association (ReMA) is pleased to provide the following comments to the Department of Commerce (DOC) in its Section 232 investigation on the impact of imports of robotics and industrial machinery on U.S. national security.

ReMA strongly supports the Administration's goals of enhancing domestic manufacturing supply chains, of which the recycled materials industry plays a critical role. However, we are very concerned about the negative impact of imposing new tariffs on imports of equipment, machinery and components that recyclers rely on to produce the materials that the U.S. manufacturing supply chain is increasingly reliant upon.

Recycling operations are an essential part of domestic manufacturers' supply chains, providing approximately 40 percent of raw material needs each year across all materials. For example, more than 70 percent of steel production in the U.S. is produced using recycled steel processed by U.S. recyclers, while nearly 85 percent of all aluminum consumed by U.S. aluminum producers comes from recycled aluminum. The viability of these recycling operations is heavily dependent on the procurement of industrial machinery that are only available outside the United States.

In fact, the imposition of tariffs on these producers under Section 232 would only further reduce the competitiveness of the U.S. manufacturing sector, which would then be even more dependent on foreign-sourced goods and products, counter to the goals of the Trump Administration's trade and manufacturing strategy.

As the industry association that represents the U.S. recycled materials industry in the United States, ReMA appreciates DOC's consideration of its position in this investigation.

Overview

ReMA, formerly the Institute of Scrap Recycling Industries (ISRI), is the Washington, DC-based trade association representing the U.S. recycled materials industry. ReMA is the world's largest trade association representing recyclers, including producers, processors, consumers, traders, and brokers of recycled materials, as well as the associated equipment and service providers that keep U.S. recycling infrastructure running. ReMA members make possible the recycling of ferrous and non-ferrous metals, recovered fiber and paper, plastics, tires and rubber, electronics, glass, and textile products.

Recyclers in the U.S. are the first link in our nation's vast and resilient supply chain that supports American manufacturing and, as a result, U.S. economic and national security. Recyclers supply high-quality, renewable resources for everything from essential national infrastructure, like bridges and buildings, to consumer products, such as laptops, soda cans, boxes, and cars. ReMA members consist of both small, family-owned businesses, including many that have been in continuous operation for 100 years or more, and large, publicly traded corporations. But what they have in common is their critical role in supplying more than 40 percent of the input needs for manufacturers.

In 2024, U.S. recyclers processed 135 million metric tons of materials, including approximately 65 MMT of steel, 42 MMT of recovered paper and fiber, nearly 9 MMT of non-ferrous metals and approximately 6 MMT of recycled and reused electronic products. In the U.S., recycled iron and steel, commonly known as ferrous scrap, is the single most important raw material input for domestic steel production, and is the primary feedstock for approximately 70 percent of steel output nationwide each year. Similarly, recycled aluminum is the primary feedstock for approximately 85 percent of U.S. aluminum output annually.

The U.S. recycled materials industry is a vital component of the American economy and manufacturing supply chains, generating nearly $170 billion in total economic impact each year, including more than $47 billion in wages to U.S. workers. The industry also contributes nearly $19 billion in federal, state, and local tax revenues, while supporting nearly 600,000 American jobs. Recycling operations can be found in each of the 435 Congressional districts nationwide, with these direct industry jobs paying on average $90,000 each year in wages and benefits going directly to American workers and communities.

Due to continuous innovation and increased efficiency, U.S. recyclers process more recyclables each year than U.S. manufacturers can consume and exported $28 billion in recycled materials to the global marketplace in 2024. As global demand for recycled materials has risen in recent years, U.S. exports reduce the U.S. trade deficit, as approximately 30 percent of U.S.-processed recycled materials are

exported each year. Without these exports, materials would be stranded and landfilled, where they cannot contribute to the economic health and well-being of the manufacturing base in this country.

Recycling is Essential for U.S. National Security

The U.S. steel and aluminum sectors are global leaders in low-carbon metals production, and one key reason is the use of recycled content in the production processes. For steel, EAF steelmaking now accounts for the vast majority of steel production in the U.S. – approximately 70 percent – while primary production from extracted materials constitutes just 30 percent. Globally, these numbers are reversed, but new steelmaking capacity additions in the U.S. utilize the EAF steelmaking method. This displays how critical recycling operations in the U.S. are to the success of the broader U.S. steelmaking and manufacturing sectors domestically. Similarly, approximately 85 percent of aluminum production in the U.S. utilizes recycled content as its main input material.

The Trump Administration has prioritized strengthening U.S. manufacturing, which includes the imposition of tariffs under Section 232 to address national security threats of imports of steel and aluminum products. While these investigations determined that steel and aluminum imports threaten to impair U.S. national security, the imposition of tariffs on imports of industrial machinery would be counterproductive to achieving President Trump's goals.

The U.S. steel and aluminum industries depend on recycled materials in their supply chains and also rely on imported industrial machinery, including robotics, to maintain their operations. Effective trade policy must therefore account for the potential adverse impacts of tariffs on the steel and aluminum supply chains, particularly the U.S. recycled materials industry and its industrial machinery and equipment suppliers.

When costs increase for domestic manufacturers and recyclers, it will reduce these companies' ability to invest in new technologies that will ensure the domestic steel and aluminum industries have the highest-quality feedstock to continue to grow the U.S. manufacturing base. These risks are particularly acute for small- and medium-sized recyclers, who have outsized impacts in local communities nationwide and will be unable to pass the additional burden of higher costs onto the steel and aluminum producers.

Industrial Machinery and Equipment Crucial Operations of U.S. Recyclers

Key to ensuring the competitiveness of U.S. recyclers is the ability to process a wide range of recycled materials in an efficient and effective manner. New technology and innovations have allowed the U.S. recycled materials industry to grow and adapt to the changing market dynamics to meet the needs of consuming industries, including the domestic steel and aluminum sectors. A potentially wide range of machinery used in the recycling operations would be negatively impacted by new national security tariffs on robotics and industrial machinery.

According to industry estimates, approximately 90 percent of recycling equipment and machinery needs are met by imports. The supply chains supporting U.S. recyclers and manufacturers are extremely complex and highly-specialized, which oftentimes makes it difficult to find alternative sourcing of key pieces of machinery and equipment. The majority of this equipment is sourced from key U.S. allies including, Canada, Mexico, members of the European Union (such as Germany, Italy, and the Netherlands), as well as Japan and South Korea.

While the U.S. may have sufficient domestic steel and aluminum capacity to meet increased demand resulting from import restrictions, there is currently no domestic manufacturing base capable of producing the specialized industrial machinery needed by U.S. recyclers and manufacturers at scale. It is our understanding that the investigation is primarily focused on addressing the potential threat of industrial machinery imports that are used to manufacture other machines, and not on machinery used in recycling processes. However, many of these suppliers provide complex equipment and components, which the U.S. does not currently have the capability to produce.

Additionally, the potential scope is broad enough where some machinery could inadvertently be included because the Harmonized Tariff Schedule of the United States (HTSUS) may not distinguish between different types of machinery. As with many capital-intensive, low margin industries, such as recycling, increases in costs for equipment and machinery cannot be passed through to manufacturers that consume recycled materials.

The countries from which the U.S. recycled materials industry imports machinery or equipment have specialized the products produced and do not compete with U.S. manufacturers for most recycling equipment. While ReMA supports the Trump Administration's efforts to reshore manufacturing jobs back to this country, the current U.S. manufacturing base simply cannot support the mass specialization that some countries have spent decades investing in for industrial machinery used by recyclers.

Scope of Section 232 Investigation on Robotics and Industrial Machinery

For the purposes of this investigation, it is important to also distinguish that most equipment and industrial machinery utilized by recyclers is oftentimes operated manually and is neither automated nor computerized. However, many pieces of machinery do contain semiconductors and motorized technology, so the potential scope and coverage of products under consideration as part of this investigation is extremely broad and makes it difficult to fully assess the potential impact of imports. Because manufacturers nationwide remain largely reliant on foreign-produced machinery and equipment, new tariffs meant to protect U.S. national security will instead only further harm the industries this Administration is seeking to strengthen.

Within the recycled materials industry, ReMA has identified certain technologies that may fall under the scope of this national security investigation. These computer-controlled pieces of equipment are used in material recovery facilities (MRFs) and certain metal recycling facilities, such as optical sorters, eddy current separators, and automated sensor machines. Most of these machines are imported into the U.S. market because there is little-to-no domestic manufacturing and what is currently available domestically is oftentimes comprised of foreign-produced parts and components.

The importance of the commodities processed by recyclers to domestic manufacturing supply chains and the robotics and industrial machinery necessary for these recycling operations should be excluded from the investigation. These facilities typically see wide varieties of material streams, including ferrous metal (steel), non-ferrous metal (copper, aluminum, nickel), plastics, paper, and glass, all of which are crucial to meeting the needs of domestic manufacturers. For example, an aluminum can returned through traditional residential recycling could be back on grocery store shelves within 60 days.

If facilities that rely on imported technologies for sorting and processing of these key manufacturing inputs are burdened by the imposition of higher tariffs, domestic aluminum facilities may not receive the used beverage containers (UBCs) that help to fuel production of aluminum in this country, while the steelmaking EAFs would not have sufficient feedstock to make new steel products.

Limited U.S. Capacity for Manufacturing of Specific Recycling Equipment

U.S. manufacturing of many industrial machinery and equipment for recyclers largely ended more than 40 years ago, as technology improvements abroad in Japan and Europe, for example, outpaced investment in the U.S. By the 1980s, most U.S. manufacturers of recycling equipment had exited the market, either through insolvency, or through acquisition, and eventually shut down U.S. operations.

Advancements in technology in Europe, in particular, have caused several U.S. companies to play a pivotal role in bringing these technologies to the U.S. recycled materials market, many as early as the mid-1980s. Prior to that period, these machines did not exist in the U.S. market and put U.S. recyclers at a competitive disadvantage compared to recyclers abroad.

Most U.S.-based machinery manufacturers, however, remain reliant on imports of critical material inputs, such as hydraulic cylinders and conveyers, in order to provide the European-style shear, baler, and logger technology for the processing of many recycled metals in the United States. The demand for shears by U.S. recyclers far exceeds the domestic manufacturing capacity and what is manufactured here oftentimes does not fit the specialized needs of U.S. recyclers.

For example, shears produced in the U.S. are only large 2,000-ton shears, but most shears sold in the U.S. market are much smaller and fall within the 500- to 1,000-

ton range. No American manufacturer currently builds machines in this category, so U.S. recyclers remain heavily dependent on European technology and manufacturing specialty.

There is no one-size-fits-all approach for how recyclers handle new purchases of equipment or machinery and most machines used by U.S. recyclers last between 8 and 15 years, depending on their function, frequency of usage, and level of maintenance. For most pieces of machinery, after approximately 12,000 operating hours, major repairs are typically required due to the destructive nature of the materials being processed. While some units can last 20 years or more, repair costs can often reach up to half of the original purchase value, but technological advancements often necessitate the need for replacement much sooner than initially anticipated.

In the recycled materials industry, new technologies help machines significantly outperform older models after 8-10 years, particularly those pieces of equipment involved in hydraulic efficiency, electronics, and automation. To meet the demands of U.S. consuming industries, recyclers must continue to reinvest in new machinery and equipment to remain cost competitive in the U.S. and global markets. As tariffs increase on industrial machinery, U.S. recyclers will not be able to make necessary enhancements operations, which will result in decreased investments, declines in productivities and higher operating costs, all of which will ultimately reduce the ability of U.S. recyclers to provide valuable feedstock to the domestic steel and aluminum sectors.

U.S. recyclers must allow for significant lead times to purchase these crucial pieces of machinery. It may take upwards of one year from when an order is placed until it is fulfilled and delivered by a foreign supplier, during which time the tariff situation may have changed multiple times. This uncertainty may result in canceled orders by U.S. recyclers and instead, force the idling of equipment or machinery while it is being repaired, instead of replaced. During this period, recycling may not take place and U.S. manufacturers may not receive the valuable recycled feedstock that power the needs of consumers nationwide.

Tariff uncertainly will reduce the competitiveness of U.S. recyclers and the broader manufacturing sector that need these critical material inputs to help secure U.S. national security. Many machinery manufacturers are unlikely to invest in new and enhanced technologies to produce recycling equipment in the U.S., and even if new manufacturers emerge, it will take between 3-5 years before any new facilities could be built, the product quality tested and ready for production.

When domestic manufacturers and recyclers absorb the associated tariff costs, it reduces these companies' ability to invest in new equipment, new workers, and local communities. These risks are greater for small- and medium-sized recyclers who have outsized impacts in local communities nationwide and will feel the acute burden of any new tariffs imposed. With increased costs and uncertainty created by new tariffs, the processing of valuable materials could shift overseas if it is no longer economically feasible to do so in the U.S. market.

Conclusion

To maintain their operations and provide ample recycled steel and aluminum to domestic manufacturers, the U.S. recycled materials industry is dependent upon reliable machinery, equipment, and components, the vast majority of which are not produced domestically. This includes highly specialized technologies such as optical sorters, eddy current separators, and automated sensor machines that are essential for efficient and high-quality recycling processes. U.S. recyclers support the Trump Administration's efforts to revitalize domestic manufacturing and bring jobs back to American workers, as U.S. manufacturers are by far the largest consumers of U.S.-processed recycled materials.

The imposition of new national security tariffs on imports of industrial machinery and robotics will adversely impact recyclers, manufacturers, and the U.S. workforce. Instead, ReMA and its membership urge the Trump Administration to focus on policy efforts that will enhance and bolster competitiveness across domestic manufacturing supply chains. This will provide certainty and clarity for U.S. recyclers and the domestic steel and aluminum sectors, which depend on recycled materials to fuel the majority of steel and aluminum production in this country.

Please do not hesitate to contact me if you have any additional questions.

Sincerely,

Adam Shaffer
Vice President, International Trade and Global Affairs
Recycled Materials Association