The Vehicle Suppliers Association

Comments of

MEMA, The Vehicle Suppliers Association

to the

Bureau of Industry and Security, Office of Strategic Industries and Economic Security, U.S. Department of Commerce

on the

Section 232 National Security Investigation of Imports of Copper

Request for Comment

Docket No. 250310-0032

April 1, 2025

Introduction

MEMA welcomes the opportunity to respond to the Bureau of Industry and Security's (BIS) Notice request for comments on the Section 232 National Security Investigation of Imports of Copper[1]. MEMA urges BIS to exclude motor vehicle components, equipment, and parts from any actions resulting from the Section 232 investigation of imports of copper.

MEMA, The Vehicle Suppliers Association, established in 1904, is the leading trade association in the U.S. for vehicle suppliers, parts manufacturers, and remanufacturers. The mobility sector depends on the resiliency and strength of suppliers. MEMA's members design and manufacture technology, components and services that enable the production of new vehicles as well as the essential maintenance and repair of the more than 295 million highway vehicles that are currently on the road in the U.S.

Vehicle suppliers employ more than 930,000 individuals and operate facilities in all 50 states and in more than 350 Congressional districts, with significant concentrations in the Midwest and Southeast.

Suppliers lead the way in new vehicle innovations. Member companies conceive, design, and manufacture the Original Equipment (OE) systems and technologies that make up two-thirds of the value of every new vehicle and supply the automotive aftermarket with the parts that keep millions of vehicles on the road, fueling international commerce and meeting society's transportation needs.

[1] Federal Register :: Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Copper

Copper is Critical to the Automotive Industry

Copper is used extensively in the automotive industry. More than 50 pounds of copper is found in a typical U.S.-built automobile: this includes about 40 pounds for electrical and about 10 pounds for nonelectrical components[2]. Over time the use of copper has expanded greatly in vehicles. According to the Copper Development Association, "In 1948, the average family car contained only about 55 wires amounting to an average total length of 150 feet. Today's luxury cars, on average, contain some 1,500 copper wires totaling about one mile in length, thanks to continuing improvements in electronics and the addition of power accessories[3]."

Copper is key in automotive applications because of its conductive and ductile properties. Substitutions for copper are limited as these qualities cannot be found in similar materials. Aluminum, for example, does not have the same electrical conductivity as copper. Further, the use of copper is important in the work being done to reduce vehicle weight- the use of copper allows for smaller gauge sizes.

The most notable use of copper is in wire harnesses. Wire harnesses are the nervous system of the vehicle, connecting all the electrical and electronic components in a vehicle. They facilitate the signal and power transmission, without which vehicles would not be able to function. As of 2020, 95% of automotive wire harnesses use copper, with demand for copper up to 1.15 million tons[4].

Copper will also be instrumental in the transition to autonomous vehicles[5]. Vehicle automation will rely on suites of technology like sensors, cameras, and automated driving control units. Copper will be the critical link to help these different parts function safely. Outside of the wiring connecting these components, copper will also be present in the printed circuit boards of the sensors and circuit boards.

Copper is a Critical Mineral for American Manufacturing

While the United States Geological Survey (USGS) does not list copper as a critical mineral, it has been labeled as such by the U.S. Department of Energy (DOE). In DOE's 2023 Critical Material Assessment, the agency moved copper from noncritical in the short term to near critical in the medium term[6].

The report cites the use of copper in vehicles, because it uses less material and improves heat transfer in thermal application applications. Copper is used in a range of powertrain types, including internal combustion engines (ICE), battery electric, and hybrids. In battery electric vehicles, copper is used in batteries, traction motors, inverters, wiring systems, and power electronics. Electric vehicles (EVs) use four times the amount of copper - approximately 83 kg

[2] https://www.copper.org/education/c-facts/transportation/print-category.html
[3] https://www.copper.org/education/c-facts/transportation/print-category.html
[4] 2016.10-Auto-Wire-Harness-Factsheet-1.pdf
[5] Copper: The Material of Choice for Vehicle Manufacturers - International Copper Association
[6] DOE Critical Materials Report - 2023

- compared to ICE vehicles, mainly in the traction motor[7]. The amount of copper used increases with vehicle size. For example, battery electric buses use 369 kg of copper compared to 89 kg for hybrid electric buses.

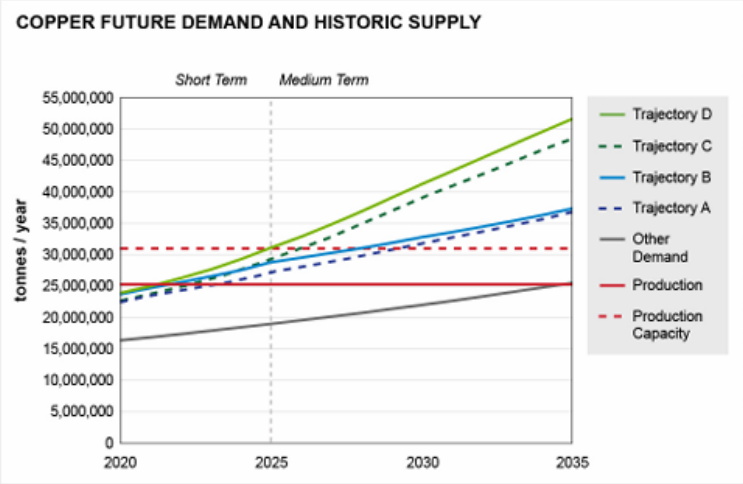

Figure 4.21. Copper demand trajectories, current production, and production capacity.

Figure 4.21 illustrates the demand for copper against the current production and production capacity[8]. The technologies considered for copper are wind turbines, EVs, ICE vehicles, and the electric grid. "Other Demand" includes uses such as construction and consumer electronics. Figure 4.21 clearly indicates that the use of copper has begun to outpace current production and will soon outpace production capacity. Across manufacturing, construction and a range of other industries, there will be an increasing demand for copper. The U.S. government should consider how the U.S. can meet this growing demand. It is critical that there are not any barriers in place to meet the demand for copper in vehicle applications.

Conclusion

MEMA appreciates the opportunity to share its concerns and feedback on this important topic with BIS. MEMA and the supplier community support BIS' efforts to ensure U.S. national security. We urge the Administration to ensure that the vehicle supplier community can continue to access copper for use in motor vehicles, and that motor vehicle equipment be excluded from any actions as a result of this investigation.

MEMA reiterates its sincere interest in continuing to work with the agency as this proceeding moves forward. If you have any questions concerning this document, please do not hesitate to contact Ana Meuwissen at ameuwissen@mema.org or Bill Frymoyer at bfrymoyer@mema.org.

[7] DOE Critical Materials Report - 2023
[8] DOE Critical Materials Report - 2023