

Automotive copper demand to increase

New IDTechEx research predicts the volume of copper needed for car components will rise to 6 million tonnes per annum by 2040, increasing 143 percent from 2020 levels. The increase correlates with the growth of electric and autonomous vehicles that contain significantly more copper than traditional internal combustion engine (ICE) cars.

The research, commissioned by the International Copper Association (ICA), found that an electric and autonomous car in 2040 will contain approximately 73kgs (161lbs) of copper, compared to around 30kgs (66lbs) in a traditional ICE car today. The largest projected vehicle sources of copper demand in 2040 include the low voltage wire harness (39 percent), the Li-ion battery (29 percent) and the electric traction motor and power electronics (17 percent). Autonomous vehicle systems, consisting of cameras, lidars, radars and the autonomous driving control unit (ADCU), comprise six percent of an autonomous vehicle's copper usage.

“Battery electric vehicles are predicted to dominate the automotive market by 2040, driving a decline in internal combustion engine cars,” explains Principal Technology Analyst at IDTechEx, Luke Gear. “In the late 2020s, autonomous cars will also emerge, sparking another paradigm shift in the automotive industry. Since an electric car requires more copper for motors and batteries, and an autonomous car requires more copper for multiple radars, lidars and cameras, these market dynamics point to a positive future for copper demand.”

The IDTechEx research considered more than 30 components across five different powertrain variants and four variations of autonomous vehicles. The analysis found the low voltage wiring loom remains a dominant source of copper demand, accounting for more than 50 percent of the demand through 2040, while electrification and autonomy trends will drive rapid new growth in automotive copper demand.

“The research clearly shows increasing demand for copper through the energy transition to electric vehicles and as the world moves away from internal combustion engines. The next generation of sustainable and smart vehicles will need copper to operate cleanly, efficiently and reliably. This is further evidence of copper supporting global hi-tech development and supporting the needs of a developing society.” said Colin Bennett, Market Intelligence Director at ICA.

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About the International Copper Association

The International Copper Association (ICA) brings together the global copper industry to develop and defend markets for copper and make a positive contribution to the UN's Sustainable Development Goals. Headquartered in Washington, D.C., ICA has offices in three primary regions: Asia, Europe and North America. ICA and its Copper Alliance® partners are active in more than 60 countries worldwide. For additional information, please visit copperalliance.org.

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