

## Chinese Drive for Motor Efficiency to Increase Copper Demand

According to new research commissioned by the International Copper Association (ICA), copper demand will likely be a major beneficiary of the Chinese drive for greater motor efficiency. The research, undertaken by MetalsPlus, found global copper demand for motors and generators could grow to 2.73 million tonnes annually by 2022.

China is expected to play a key role in this increased demand. Accounting for around half of copper usage in motors, it has taken legislative steps to vastly improve standards of motor efficiency—implementing the IE3 motor efficiency legislation—and greater efficiency requires more copper.

Paul Dewison, Managing Director of MetalsPlus and author of the research, explains that the push towards a low carbon economy is driving change in motor design. “Motors are by far the largest consumer of electricity, using 38% of total production. Increasing efficiency in motors means a lower consumption of energy. In turn, lower consumption of energy means lower demand for fossil fuels to generate electricity. With copper a critical material in increasing motor efficiency, demand in this sector is set to grow significantly.”

“This latest research serves to highlight the vital role of copper in the energy transition,” says Colin Bennett, Global Manager, Market Analysis and Outreach, ICA. “In a country the size of China, there are vast opportunities in sectors from heavy industry and utility motors to smaller applications such as the automotive sector and domestic appliances for increased efficiency. With copper facilitating the change, it will be a building block of the transition to a low carbon economy.”

### Growth Drivers

Copper already exists in large quantities throughout the motors and generators market. In 2017, demand reached 2.13 million tonnes. With 28% of the sector’s copper market share, the largest proportion of material is found in industrial motors, followed by domestic appliances (19%) and HVACR (17%) respectively.

Currently, the technical rate of loss of energy between input and useful application in motor driven systems stands at 45%. Though much of this loss is in equipment driven by motors rather than the motors themselves, the spotlight still falls on increasing motor efficiency. Copper has the ability to reduce this loss, through the optimization of existing designs, the development of rare earth permanent magnet solutions (REPM) and other non-PM solutions. As a result, we will see current demand growth in the immediate future. Growth will be spread across the sector, with the growing uptake of electric vehicles placing emphasis on the automotive sector, raising its share of the motors and generators market.



## About the International Copper Association (ICA)

ICA brings together the global copper industry to develop and defend markets for copper and to make a positive contribution to society's sustainable development goals. Headquartered in Washington, D.C., ICA has offices in four primary regions: Asia, Europe and Africa, Latin America and North America. Copper Alliance programs and initiatives are executed in nearly 60 countries through its regional offices. For additional information, please visit [www.copperalliance.org](http://www.copperalliance.org).

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