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Copper to Benefit from Global Drive for Motor Efficiency

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

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 continues to highlight the vital role of copper in the energy transition,” says Colin Bennett, Global Manager, Market Analysis and Outreach, ICA. “From heavy industry and utility motors to smaller applications such as the automotive sector and domestic appliances, the increase in efficiency facilitated by copper will be a building block of the transition to a low carbon economy.”

Growth Drivers

Copper already exists in large quantities throughout the motors market—in 2017, demand reached 2.13 million tonnes. With 28% of the 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 stands at 45%. However, as the spotlight falls on increasing efficiency, copper’s ability to reduce this loss—either through the optimization of existing designs, the development of rare earth permanent magnet solutions (REPM) or other non-PM solutions—will see current demand grow in the immediate future. Growth will be spread across the sector, though the increasing uptake of electric vehicles will see the automotive sector significantly raise its share.

Increasingly ambitious carbon footprint objectives, and the subsequent proliferation of Minimum Energy Performance standards, are increasing the pace of adoption. As more efficient motors become mandatory, the demand for copper will rise. This is particularly evident in China and other Asian countries, where the IE3 motor efficiency legislation is now firmly on the agenda. In 2012, China began plans to implement IE3, and in 2017 India set its first mandatory ruling: a minimum of IE2 for industrial motors.



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.

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