

## Copper substitution remains low in 2020

According to new research commissioned by the International Copper Association (ICA), substitution of copper remained low in 2020. Net substitution stood at 0.95 percent of total global copper use, a slight rise from 0.83 percent in 2019. This low substitution rate was due to users focusing on COVID-19's economic impact and relatively low copper material costs.

The new research, carried out by the DMM Advisory Group, revealed that copper continues to offer the best cost-performance combination for many applications – especially where high electrical conductivity, corrosion, or friction resistance is required, or the available space is limited. For other applications, increasing materials' costs can motivate new research and development initiatives to use copper more efficiently – miniaturization – or to use alternative materials.

Krisztina Kalman-Schueler, author of the research and Managing Partner at DMM Advisory Group, explains, "Copper substitution may occur when alternative materials offer additional technical benefits, beyond lower material costs, or when they can significantly reduce capital expenses. In 2020, the incentive to substitute was low and, looking back, copper substitution has been low over the past five years."

China, the largest market for copper, still has the lowest relative net substitution across the world at 0.6 percent of China's total copper use. The drive for increased energy efficiency in electric motors, more electrical mobility applications, and increased environmental regulations remain advantageous for copper. Undergrounding, laying overhead power lines underground, and HVDC power distribution networks also offer growth potential for copper.

Colin Bennett, Market Intelligence Director at ICA, added, "The low levels of material substitution experienced in 2020 present a promising outlook for the industry's future. As China, Europe and the U.S. work to introduce more environmental laws and regulations, we anticipate more copper gains in a wide variety of applications including electromobility, heat exchangers and transformers."

### 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 [www.copperalliance.org](http://www.copperalliance.org).

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