

Life Cycle Assessment Highlights Importance of Copper in China's Green Economy

According to new research from the International Copper Association (ICA), copper power cables in China perform 5–21% better across their entire life cycle than aluminum power cables for selected sustainability indicators such as climate change, energy, eutrophication, acid rain and smog. Accordingly, the research contends they should be considered the new standard when it comes to developing a greener and more sustainable economy in China.

The research—undertaken by IKE Environmental Technology and thinkstep AG and peer reviewed according to ISO standards by an international panel of recognized experts—utilizes life cycle assessment (LCA) to analyse the environmental impacts associated with the many stages of a power cable's life, from the mining and smelting of the raw material, through the manufacturing and transportation process, to installation and finally recycling and disposal.

Due largely to electricity transmission loss, the 'use' phase dominates the entire lifecycle results for power cables. With a larger carrying capacity and a lower rate of loss between input and useful application, copper cables are noticeably more efficient than aluminum-based versions when based on China's cable selection standards. Other stages of the life cycle are less affected by the material in question. For example, end-of-life performance depends on the percentage collection of the material and recycling technology.

"This life cycle assessment is one of the most relevant, representative and robust data sets globally representing copper in use," Fleming Voetmann, Vice President, Public Affairs at ICA. "Alongside other factors such as price, technical details and other more localized environmental issues, these results need to be considered when selecting power cables in China if improvements are to be made."

This research has already had a significant impact on Chinese policy, with the Ministry of Industry and Information Technology acknowledging the results. This could see the removal of any contents related to "using Al to save/replace copper in the power cable sector" from China's 13th Five-Year Plan and, even more significantly, shape the approach for the 14th Five-Year Plan. Alongside "Made in China 2025" these five-year plans represent the first integrated green development plan in China. This consists of five development goals, ten major tasks and five safeguard measures, and looks to strengthen product LCA-based green management.

Colin Bennett, Global Manager, Market Analysis and Outreach, ICA said: "The LCA tracks copper through the value chain, and is based on the best available data, both public and proprietary. The results are further evidence that copper represents a significant building block in the transition to a low carbon economy."



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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