

### Cover Story

## 5mm Copper Heat Exchangers - The Preferred Choice for next-gen energy-efficient and eco-friendly room air conditioners in India

Copper heat exchangers  
now capture over **99%**  
of the market,

with **60%** featuring the optimised **5mm** HEX design.

### Overview

In response to a growing demand for energy-efficient, eco-friendly and reliable room ACs, **India's OEMs are opting for smaller diameter (5 mm) copper inner-grooved tubes over aluminium alloy micro-channel heat exchangers (ALMCHE)**. In the early 2010s, to address the dual challenge of manufacturing energy-efficient ACs at an optimised cost, quickly switched over to ALMCHE, which gained a market share of 45% by 2013-14. However, there were persistent issues with these aluminium heat exchangers due to leakages and repair issues. ICA India started working with Indian OEMs to optimise the room ACs with 5 mm inner-grooved copper tube heat exchangers.

Today, with ICA India's support in R&D and technical collaboration, the 5mm copper heat exchanger (HEX) has firmly established its place as the go-to option in the market, replacing ALMCHE. Currently, copper heat exchangers dominate with a 99% market share, and 60% of these units feature the optimised 5mm heat exchangers. This trend reinforces copper's value in India's HVAC systems as reliable, durable, energy-efficient and eco-friendly.

## Highlights

- Room AC OEMs in India trust copper heat exchangers which have **>99% market share**
- **5mm copper tube HEX technology adopted by 60% of OEMs** for next-gen energy-efficient and eco-friendly ACs

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## In Focus

# Maharashtra Government Leads with Mandatory Electrical Inspections



**Maharashtra has set a new standard as the first state in India to require periodic electrical inspections across all buildings, enhancing safety and minimising the risks associated with electrical failures.** This proactive regulation aligns with National Electrical Code (NEC) standards and highlights the importance of copper conductors for increased reliability in low-voltage structures. Maharashtra underscores the role of comprehensive safety protocols in construction and infrastructure management by mandating the involvement of electrical engineers in project teams alongside civil engineers.

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## **Media Spotlight**

# Copper for Renewable Energy



**K.N. Hemanth Kumar**  
Director E-mobility

As India pursues its ambitious goal of achieving 500 GW of renewable energy by 2030, copper stands as a critical enabler. Hemanth Kumar, ICA India's Director of E-Mobility, discusses how copper's exceptional conductivity and durability are essential in developing the country's solar and wind energy infrastructure. Copper's role extends beyond energy efficiency; it is foundational to India's sustainable growth, driving emissions reductions while supporting a robust renewable energy framework.

## **Key Takeaways**

- Copper is integral to solar and wind infrastructure, driving India's clean energy initiatives.
- Essential for emission reductions, copper supports India's economic progress toward a greener future.

[Read the Full Op-ed](#)

## Event Highlight

### Lithium-Ion Battery Potential - Insights from Mayur Karmarkar

# International Summit on Lithium-Ion Batteries

**Mayur Karmarkar**

Managing Director, International Copper Association India



Mayur Karmarkar, Managing Director of ICA India, recently spoke at the International Summit on Lithium-Ion Batteries, **shedding light on the promising role of lithium-ion technology in fostering a sustainable future**. Emphasising the importance of domestic manufacturing, he highlighted how India's lithium-ion battery sector is progressing rapidly, with support from the India Energy Storage Alliance (IESA). Mayur's participation underscores ICA India's commitment to advancing energy storage solutions in the country's green energy landscape.

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International Copper Association India