Copper plays a key role in promoting green buildings

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India's real estate industry, the second-largest employer after agriculture, is projected to reach a market size of $1 trillion by 2030, contributing around 18-20 per cent to the GDP. Despite its economic significance, this sector poses a substantial environmental challenge, accounting for over 22 per cent of the nation's total emissions.

Green buildings aim to address this by incorporating sustainable practices across all aspects of construction and operation, from plumbing and electrical wiring to water usage and electric vehicle charging infrastructure.

Copper enhances sustainability, energy efficiency, and overall building performance. Its superior electrical conductivity ensures minimal energy loss, making it key in efficient electrical systems. Copper, boasting the highest electrical conductivity among non-precious metals, is the preferred material for wires, cables, and electrical equipment. Its high conductivity translates to increased energy efficiency and more compact designs.

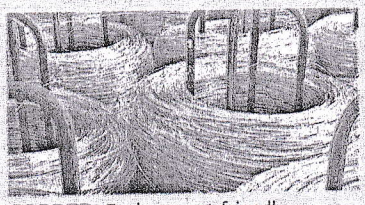
Copper's superior electrical and thermal conductivity make it a central component in ventilation equipment and the automation, sensors, and controls that optimise ventilation system performance.

RENEWABLE ENERGY SYSTEMS

This metal is essential in solar energy systems due to its exceptional electrical and thermal conductivity and its high resistance to corrosion. It is used in wiring to connect photovoltaic (PV) modules and inverters, ensuring efficient electricity transmission generated by solar panels. In wind energy technologies, copper is crucial in electrical generators, connections, and protective grounding systems.

Copper is infinitely recyclable — it can be reused without losing any of its properties.

India, with its rapid urbanisation faces an urgent need for sustainable



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urban design. By 2036, 600 million people are projected to reside in urban areas, exponentially increasing current energy use and CO_2 emissions, and accelerating the need for green buildings.

To combat this, the government promotes green building practices through certifications like IGBC (Indian Green Building Council) and GRIHA (Green Rating for Integrated Habitat Assessment), along with global certifications like LEED (Leadership in Energy and Environmental Design).

The policies must focus on developing the green building ecosystem. Firstly, the correct implementation of building codes and standards that mandate the use of high-efficiency materials like copper. The builders and developers who adopt copper-intensive green technologies should be incentivized.

Secondly, there is a need for expansion of investments in renewable energy projects, particularly those involving solar and wind power, ensuring these projects are equipped with copper-based technologies for maximum efficiency and lifespan.

Thirdly, a large-scale informative awareness campaign to drive demand for sustainable construction practices is also needed to educate the builders and consumers about the benefits of copper in green building.

Lastly, it is crucial to engage in global partnerships to adopt best practices and cutting-edge technologies in green building, accelerating India's journey towards Net Zero.

The writer is Managing Director, International Copper Association (ICA) India