

energyoutlook

REDEFINING ENERGY SECTOR

Azure Power win
130 MWs
Solar Power Projects

vikramsolar
first rooftop solar project
Indian defence sector

Diwaker Bharadwaj
President Marketing Communications
& CMO Packaging Development
Polycab Wires Pvt Ltd.

Mr. Shashi Amin,
President – Corporate
Polycab Wires Pvt Ltd.

Sh. R.K. Singh meet
Battery
Manufacturers
to set up plants in India

**Flagged off
India's 1st
Hydrogen
Fuel Cell Bus**

MOU'S

Mahindra & Ford
to co-develop EV

SUZLON

63 meters
wind turbine longest blade



Launches
India EV charging solutions
to support Government's
Solar Sector

2030 EV vision

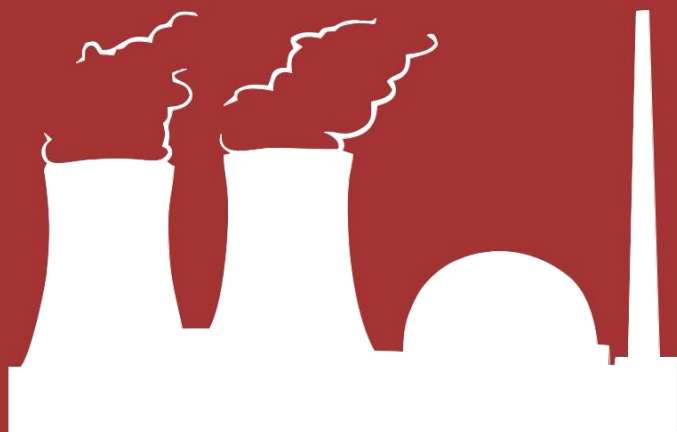
Corporate Funding

Report By **\$2 Billion**
MERCOM
CAPITAL GROUP

POLY CAB Moving from wires and cables to complete electrical solutions

CSE

(Conventional Source of Energy)



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Energy Outlook Exclusive Interview with
Mr. Sanjeev Ranjan - Managing Director (MD),
International Copper Association India



Exclusive Interview

Mr. Sanjeev Ranjan
Managing Director (MD)
International Copper
Association India

Energy Outlook Exclusive Interview with Mr. Sanjeev Ranjan - Managing Director (MD), International Copper Association India

EO: Please share a brief about International Copper Association, Ltd.

Mr. Sanjeev Ranjan: ICA is an organization that presents a strong, united voice for the world's copper industry. ICA is working to defend and grow markets for copper based on its superior technical performance and its contribution to a better quality of life. Some of the key areas where we focus our efforts on are energy security, electrical safety, standardization, certification & quality control of distribution transformers, which helps organizations.

ICA India is closely working with various industry players by promoting new technology, knowledge sharing and best practices. Some of our initiatives are:

- Encourage safe house wiring practices in the Building Construction sector
- Increase awareness on Power Quality through Asia Power Quality Initiative Platform
- Propagate the use of Energy

Efficient Motors and Pumps in Industries and Agricultural sector

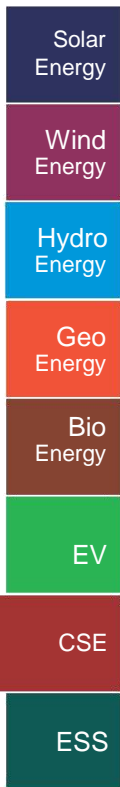
- Promote 5mm Microgroove Copper Tube heat exchangers technology to OEMs
- Promote technology adoption of Copper Motor Rotor to industries
- Encourage Energy Efficient and Reliable Distribution Transformer to reduce distribution losses
- Promote increased use of Renewable Energy Technologies & Electric Transportation
- Promote use of Copper in Power Cables because of High Reliability, Quality of Power, Lower Life Cycle Cost and Safety to the end users

EO: How International Copper Association, Ltd. is contributing in Energy Sector?

Mr. Sanjeev Ranjan: Renewable energy sources such as solar, wind, tidal, hydro, biomass, and geothermal have become significant sectors of the energy

market. The rapid growth of these sources in the 21st century has been prompted by increasing costs of fossil fuels as well as their negative environmental impacts. Additionally, Copper inherits properties such as higher conductivity/ lower resistivity, excellent thermal conductivity, lesser prone to corrosion. Copper is an excellent thermal and electrical conductor, it is less prone to Corrosion, has lower Electrical Resistivity among the engineering metals. Thus, it is preferred in applications, such as ENERGY, which has higher focus on quality, safety, reliability & efficiency. Power systems that utilize Copper, generate, transmit, and distribute Energy with higher Efficiency and with minimum environmental impacts. International Copper Association India is closely associated with government agencies who are concerned and related to electrical energy. ICA India shares knowledge and provides training support, give inputs towards guidelines, standards etc.

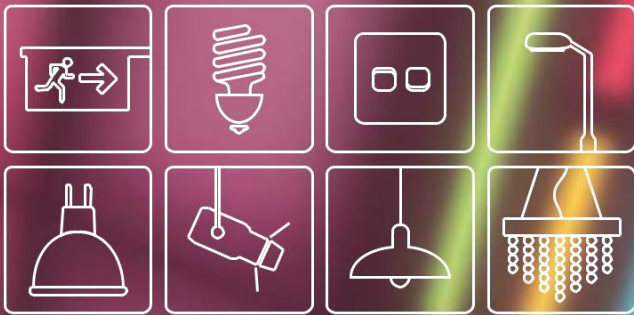
EO: MNRE target to achieve 175 GW in Renewable Energy by 2022, Your Statement.



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MNRE Target of 175 GW (including Solar 100 GW, Wind 60 GW) has acted as a catalyst with last four years since 2014 seeing addition of approx. 40 GW Renewable Energy. Increased Installations have brought in latest technologies along with reduced project costs. Simultaneously, there has been a fall in tariffs to as low as Rs.2.50. Country may achieve a target of 130 GW by 2022, as opined by market experts.

EO: How the government's policies are contributing India's demand for copper?

Mr. Sanjeev Ranjan: Overall, copper usage in India in 2016 is around 1 million tons. Of this, 45% was achieved through domestic primary producers, 26% through imports of refined copper and copper semis, 13% as part of imports of finished products using copper and around 20% through secondary copper.

Wires and cables market is expected to double in size in the next few years. The market is growing at a CAGR of 15% as a result of growth in the power and infrastructure segments. The present estimated per capita consumption is only about 0.5 kg. As the new government is focusing on 'Make in India,' the industry can grow at a similar rate for the next 5 years.

Copper goes into various uses such as building, cabling for power and telecommunications, automobiles etc.

In terms of growth, India's copper usage has increased by CAGR 5.3% since 2006. Its growth rate is second only to China, grown by CAGR 7.8% during the same period. Overall, the copper usage in world has grown by 1.4% during the same period.

Copper industry is facing competition from refined copper imports coming under FTAs with ASEAN & Japan and we are unable to compete with them owing to our very thin margin in smelting & refining. In addition to this, domestic manufacturers of refined copper end up paying higher duty for their inputs (copper concentrates) compared to imported finished products (Rods & wires) under various FTAs.

Imports of materials under FTA from Asian countries like Japan and the negative duty structure following it; in our viewpoint, these FTAs should be re-evaluated and necessary steps should be taken to reverse the adverse impact on the industry. The government should also look to eliminate anomalies related to the inverted duty structure at the earliest to give equal platform to the domestic industry for competing with imports.

EO: "Electric vehicle (EV) usage is expected to grow 9x over the next decade resulting in a 7% increase in copper demand." Please brief us a note about this statement.

Mr. Sanjeev Ranjan: Absolutely! A single electric car can have up to six kilometers of copper wiring, which is about three-four times more copper than a regular vehicle. A global ICA report also suggests that while cars

using internal combustion engines require up to 23 kg of copper each, a hybrid electric vehicle uses nearly double that amount at 40 kg of copper, and a plug-in hybrid electric vehicle uses 60 kg. Depending on the size of battery, an electric bus can use between 224 kg and 369 kg of copper.

Copper is also a component of the lithium-ion batteries used in the electric vehicles as well as power invertors and in the charging infrastructure needed to keep them running. Electric vehicle rotary motors use up to four times the amount of copper as that in a traditional combustion engine, from around 20 kilograms to 80 kilograms. The Indian government is planning to move towards all electric vehicles by 2030. Hence, increased EV usage is expected to result in strong growth for copper demand, expectedly up to 7% approximately.

EO: How E-mobility is making a mark in Renewable Energy Sector?

Mr. Sanjeev Ranjan: Copper demand will proliferate due to battery electric vehicles. India and many countries in the world plan to reduce (and even ban) fossil fuel vehicles. Thus, demand for copper from battery electric vehicles will increase. Also because copper is a highly efficient conduit, it is used in renewable energy systems to generate power from solar, hydro, thermal and wind energy across the world. Copper helps reduce CO2 emissions and lowers the amount of energy needed to produce electricity.

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- Solar Energy
- Wind Energy
- Hydro Energy
- Geo Energy
- Bio Energy
- EV
- CSE
- ESS



Mr. Sanjeev Ranjan



Mr. Sanjeev Ranjan is the Managing Director (MD) of International Copper Association India.

He is an alumnus of IIT Roorkee, and holds a Post Graduate Diploma in Business Management from XLRI, Jamshedpur.

He has more than 28 years of cross functional experience in related domains like manufacturing, mining and metals, oil and gas, energy and infrastructure.

Interview

largest populated country in the world, India has many reasons to rejoice over the bright outlook of the adoption of e-mobility. In a recent report by NITI Aayog, the statistics mentioned that the country could reduce its energy demand by 64% and carbon emissions by 37% by making its passenger mobility shared, electric, and connected. India's automobile industry is the sixth largest in the world while it contributes 22% of the total manufacturing. Thus, adoption of electric vehicles will also play an important role in increasing the share of manufacturing in India's GDP from the current 15% to 25% by 2022.

Both Urban and Rural Population in India are still primarily dependent on public transportation, thus signifying the importance of public transport and the impact it will have towards the government's e-mobility vision. The global electric bus market is set to witness an impressive 33.5% CAGR growth by 2025. Preserving and further augmenting this mode through radical e-mobility urban designs will help advance the last mile connectivity

and bring in desirable public transportation to both rural and urban areas. The concept of charging from Renewable Energy sources for EV based public transportation will help India to not only fulfil its renewable energy goals but also assist it in other facets like the 'Make in India' vision.

EO: Closing comments for our readers.

Mr. Sanjeev Ranjan: Since copper is an excellent thermal and electrical conductor among the engineering metals, power systems that utilize copper generate and transmit energy with high efficiency and with minimum environmental impacts. By using copper instead of other lower electrical energy-efficient metal conductors, less electricity needs to be generated to satisfy a given power demand. Copper conductors are used in major electrical renewable energy components, such as turbines, generators, transformers, inverters, electrical cables, power electronics, and information cable.

But, absence of quality marking and lack of enforcement of standards & codes are definitely the major downers for the copper industry in India. In addition, one has to realize the mining is unpredictable. The decline in grade has increased processing cost while impure content has posed new challenges for smelters. The average cycle to transform copper from its core to final product is 100 days, which makes the business highly working capital intensive.

The major concern for the industry is the unregistered secondary copper market that ensues the central government a loss of Rs. 500 crore approximately every year owing to non-payment of taxes. According to a report by the association, there are over 1,000 copper scrap processing units in the country, of which over 750 are unregistered. We hope the government comes up with policies to curb the illegal copper markets, as that would rightly encourage the legal copper cycle in the country. 🌟

International Copper Association India

The International Copper Association India (ICAI) is a member of Copper Alliance and the Indian arm of the International Copper Association Limited (ICA), the leading not for profit organization for the promotion of copper worldwide set up in 1959.

ICA India was formed in 1998 to actively associate with the growing number of copper users in India. The objective is to "Defend and grow markets for copper based on its superior technical performance and its contribution to a higher quality of life worldwide". ICA India conducts various programs in the interest of Electrical Safety, Energy Efficiency and Sustainability. Employing a mix of market development and regulation advocacy approach to encourage the use of copper.

Thereby, accelerating changes and transforming the long-term markets for Copper in a sustainable way through its various major initiatives such as:

- Encourage safe house wiring practices in the Building Construction sector. Increase awareness of Power Quality through Asia Power Quality Initiative (APQI) Platform.
- Propagate the use of Energy Efficient Motors for energy savings in Industries. Promote 5 mm Microgroove Copper Tube heat exchangers technology to OEMs.
- Promote the use of High Energy Efficient Motors and Copper Motor Rotors to Industries.
- Reduce distribution losses in the Power sector through the use of low loss Distribution Transformers.
- Encourage Renewable Energy Technologies like solar water heaters

ICA India drives its initiatives through seminars, workshops and training programs across India in collaboration with other organizations, institutions and trade bodies. It also publishes technical handbooks and information booklets and brochures aimed at spreading general awareness of the benefits of Copper. The organization receives support from its global-level members and from major Indian copper producers, fabricators, cable and wire manufacturers and EE motor manufacturers. Other global development organizations also support some of ICA India programs.



