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Electrical India

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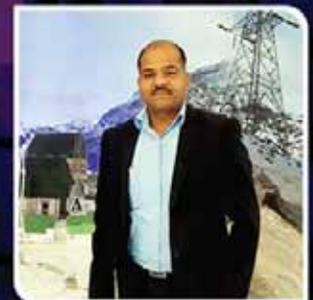
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Pradeep Kumar (CEO)

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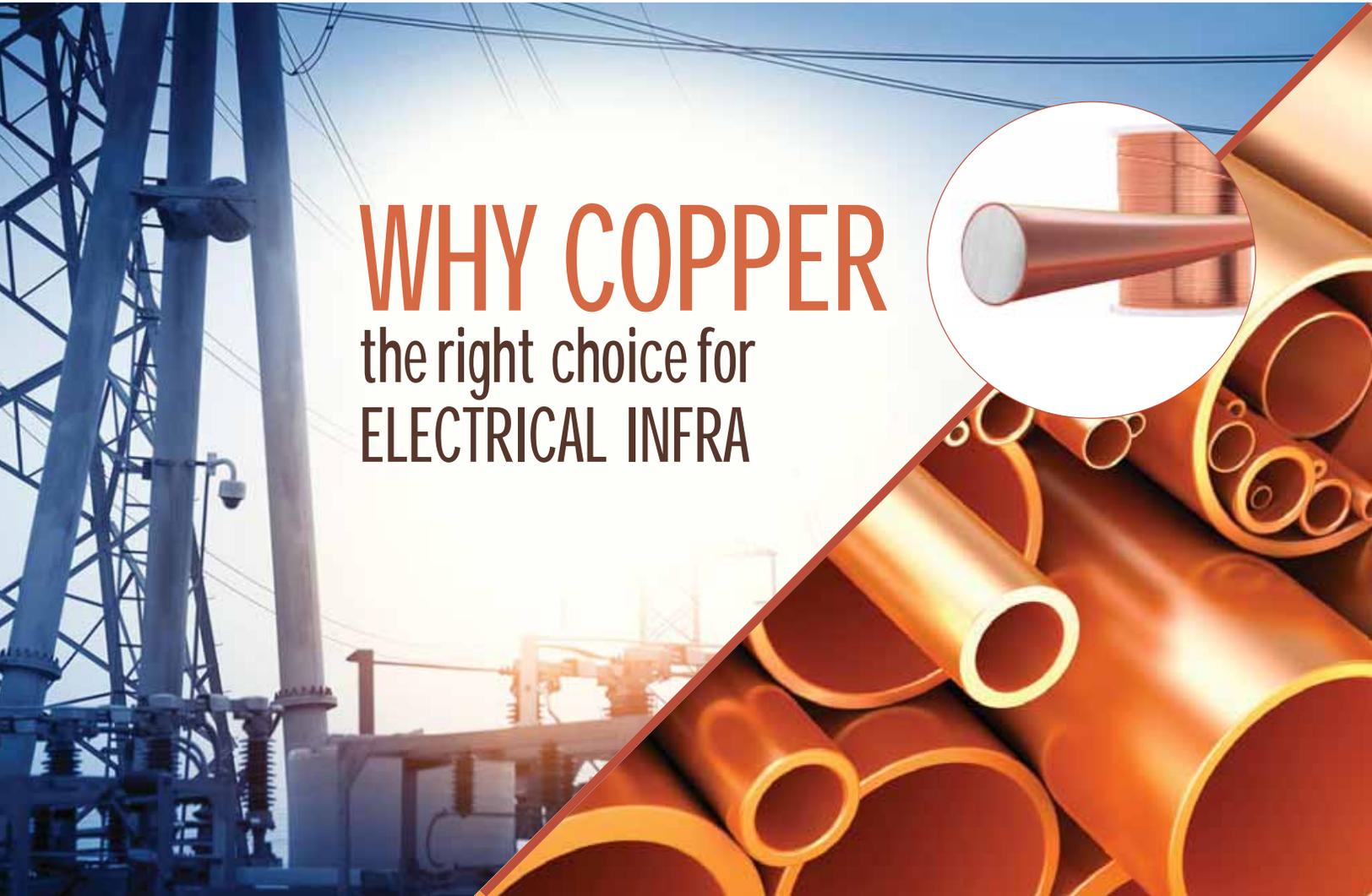
Head Office: 12th Floor 1222, Eros Corporate Park, Sector-2, IMT Manesar, Gurugram (HR)-122050, India

Factory: H1-39 (F1&F2), RIICO Ind. Area, Khushkhera-Bhiwadi Distt-Alwar, Rajasthan - 301707, India

Marketing Office: 210, Zenon Commercial Hub, Near Kiran Motor, Beside Opera House, Sosyo Circle Road Surat-395002, Gujarat(India)

Email Id: info@atsgrop.in, **Contact Us:** +91-124-2290167, +91-8527422112

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WHY COPPER

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The electrical infrastructure that India needs must be built through copper power cables.

Electricity is the backbone of modern society. It is a most elementary ingredient that enables human progress. Over the past few years, India has emerged as one of the world's fastest growing major economies and access to reliable electricity is fundamental to the development of the country. India must therefore invest in improving the quality of its electrical infrastructure to ensure that it is able to sustain its growth.

Need to invest in quality electrical infrastructure

India is progressing fast and

availability of reliable electricity is fundamental to ensuring continued growth. To sustain its growth, India will need to invest USD 4.5 trillion over the next 25 years, in developing its infrastructure. While the Government of India is taking every possible initiative to meet the infrastructure needs of the country, there is a need for a collective push and increased investment in the sector.

As India faces steep electricity demand growth rates and with government's willingness to modernise the nation, India's power

sector is also undergoing rapid transformation. India has set for itself, ambitious targets for improving access to utilities and services to improve the ease of living of its citizens.

As India grows and marches towards the achievement of these goals, the country's per capita consumption of electricity will rise. Per capita electricity consumption in India grew at a CAGR of 9.63 per cent between 2005-06 and 2015-16 to 1075 KWh, powered by rapid growth in Gross Domestic Product (GDP). What's more, India's per capita energy consumption is expected to double in the next six years.

So understandably, India is going to invest big sums to ramp up infrastructure in key areas such as housing, renewable energy, power generation, transmission and distribution, railways and metro rail systems, and smart cities.

Under the Pradhan Mantri Awas Yojana (Urban), the Government of India plans to invest 203,752 crore rupees to build 37.45 lakh homes in 7,474 projects in 4,320 cities. The government plans to invest Rs 203,979 crore rupees on building 99 smart cities.

India has invested USD 10 billion to set up and expand metro rail systems in various cities. The country is expected to spend an additional USD 20 billion on metro rail systems over the next five years.

Indian Railways plans to spend USD 142 billion by 2021 to modernize and expand capacity. The country has robust investment plans for its power sector also. By 2030, India is expected to spend one trillion US Dollars on ramping up capacity in

its power sector. The International Energy Agency (IEA) estimates that India would invest about USD 845 billion in T&D (transmission and distribution) networks between 2015 and 2040 to ensure universal access to power.

India aims to install renewable energy generation capacity of 227 GW by 2022, which will require additional investment of USD 52 billion in the next two years, making India one of the top three countries investing in renewable energy.

We must make no mistake that for all this progress to take place, India needs to create safe, reliable, efficient and high-quality electrical infrastructure that is able to support the country's economic growth for years to come.

to Insurance Regulatory and Development Authority (IRDA) data, fire losses accounted for over half of the claims lodged with general insurance companies in 2011-12.

The situation gets worse as India has extremely low penetration of insurance. Overall insurance penetration in India reached 3.69 per cent in 2017 from 2.71 per cent in 2001. It is therefore critically important for India to have reliable electrical infrastructure that inhibits instances of fire.

By investing in quality electrical infrastructure, India would be able to avoid these problems and eliminate these risks. Robust electrical infrastructure will form the foundation for the country to grow and prosper.

India is going to invest big sums to ramp up infrastructure in key areas such as housing, renewable energy, power generation, transmission and distribution, railways and metro rail systems, and smart cities.

India is prone to electrical fires

According to data from National Crime Records Bureau, a total of 113,961 people lost their lives due to fire accidents from 2010 to 2014. This is an average of 62 deaths a day. During these years, the number of deaths due to electric short circuit were about 7,743 or 7 per cent of all the deaths. By comparison, in the United States, in 2017, an average of nine people lost their lives each day in incidents of fire.

India loses property worth crores to fires every year. According

Power cables are an integral part of electrical infrastructure. These are cables that are used to conduct large volume of current to support electrical flow to residential and commercial buildings and industrial installations.

India needs to adopt copper power cables on a large scale to create high quality electrical infrastructure. Copper power cables are able to bear much greater thermal and electrical stresses, they have much higher resistance to corrosion and wear and tear, when compared with aluminium power cables. In

short, copper power cables offer safety, reliability and lend electrical efficiency to installations.

Infrastructure backed by copper power cables functions seamlessly and with great reliability for years together. Copper power cables also return much more than their initial cost, over the lifetime of a project.

To ensure reliable access to electricity, decision makers in India need to focus on this strategic area (use of copper power cables) as investments made here would deliver immense and long-lasting benefit.

Using copper power cables would help improve power quality in the country. Copper power cables are suitable for a variety of electrical applications and are used with great success in industries like oil and gas and shipping, apart from metro railways and solar energy generation projects.

Copper has a fine combination of electrical and mechanical properties. It is the ideal conductor for a large country like India where the variation in temperature is very high from 0-degree C to 47-degree C.

The use of copper in power cables significantly helps in preventing loose contacts. Copper has the much better connectivity at terminations and joints. Loose contacts are a major cause of electrical faults in railways, industries and at power utilities. Copper power cables have long life and help achieve reliable power throughout the life cycle of a project. It is best to deploy copper power cables in densely populated areas and at public places as they are able to perform under great electrical and thermal stresses.

Copper has a high melting point

and is the best electrical conductor after silver. This is why copper power cables are ideal for use in industrial and residential applications. Loss of human life is the biggest loss and is irreplaceable. Bulk of the fires that take place in India are electrical in nature. And these are preventable. India needs to build better electrical infrastructure. And adopting copper power cables is an integral part of this effort.

Gap between international electrical standards and Indian electrical standards

The Indian power sector has come a long way since the laying down of the basic framework in 1910 right up to the Electricity Act of 2003, which brought about necessary changes to an evolving sector. The Act introduced and brought provision on open access, power trading, regional/national electricity market, independent system operator, delicensing of generation, performance-based regulation, anti-theft etc.

To govern the sector better and to address its requirements, the Electricity Amendment Bill, 2014, is under consideration and inputs are being sought by the power ministry. The bill provides for 'Smart Grid', which it says is an electricity network that uses information and communication technology to gather information and act intelligently in automated manner to improve the efficiency, reliability, economics, and sustainability of generation, transmission and distribution of electricity.

This necessitates the need to bridge the gap between the electrical

standards in India and those in developed markets. The electrical standards in the country must be of international quality with better enforcement of these standards.

Across the world, most of the developed countries have standards that mandate the use of copper power cables in the interest of maintaining quality and system integrity.

Just like it has done in other fields, India must benchmark itself with the best in the world, when it comes to creating standards for electrical infrastructure. We need to come up with standards that mandate the widespread adoption of copper power cables in electrical infrastructure. This will ensure that the foundation of our electrical infrastructure is strong and is able to support India's growth for several decades to come.

Apart from battling for a change in standards, I would stick my neck out and say that there is a need to change the culture as per which projects are awarded in this country. Agencies that award projects need to reward quality of inputs and workmanship and knowhow and experience, at the time of awarding projects. They need to move away from the practice of awarding projects to the lowest bidder. Such a change will be seminal and will really go a long way in ensuring that India creates high quality electrical infrastructure that is safe, reliable and energy efficient. 



Deepal Shah

Country
Representative -
India, Pfisterer