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Copper Alliance

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# Copper Saves Lives and Property

Amol Kalsekar & Manas Kundu

Seoul , 3<sup>rd</sup> – 4<sup>th</sup> November 2015



# India

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- Current Population : 1.28 Billion
- IMF and World Bank data suggests - India to become world's fastest-growing major economy by 2016 with GDP Growth 6.5%
- Power Sector - Total Installed Capacity as on Sep. 2015: 278,734 MW
  - Thermal : 69.7%
  - Renewable : 28.3%
  - Nuclear : 2%
- Increased renewable energy capacity addition target to 175 GW by 2020; 100 GW of solar, 60 GW of wind, 10 GW of hydro and 5 GW of biomass



# India Public safety

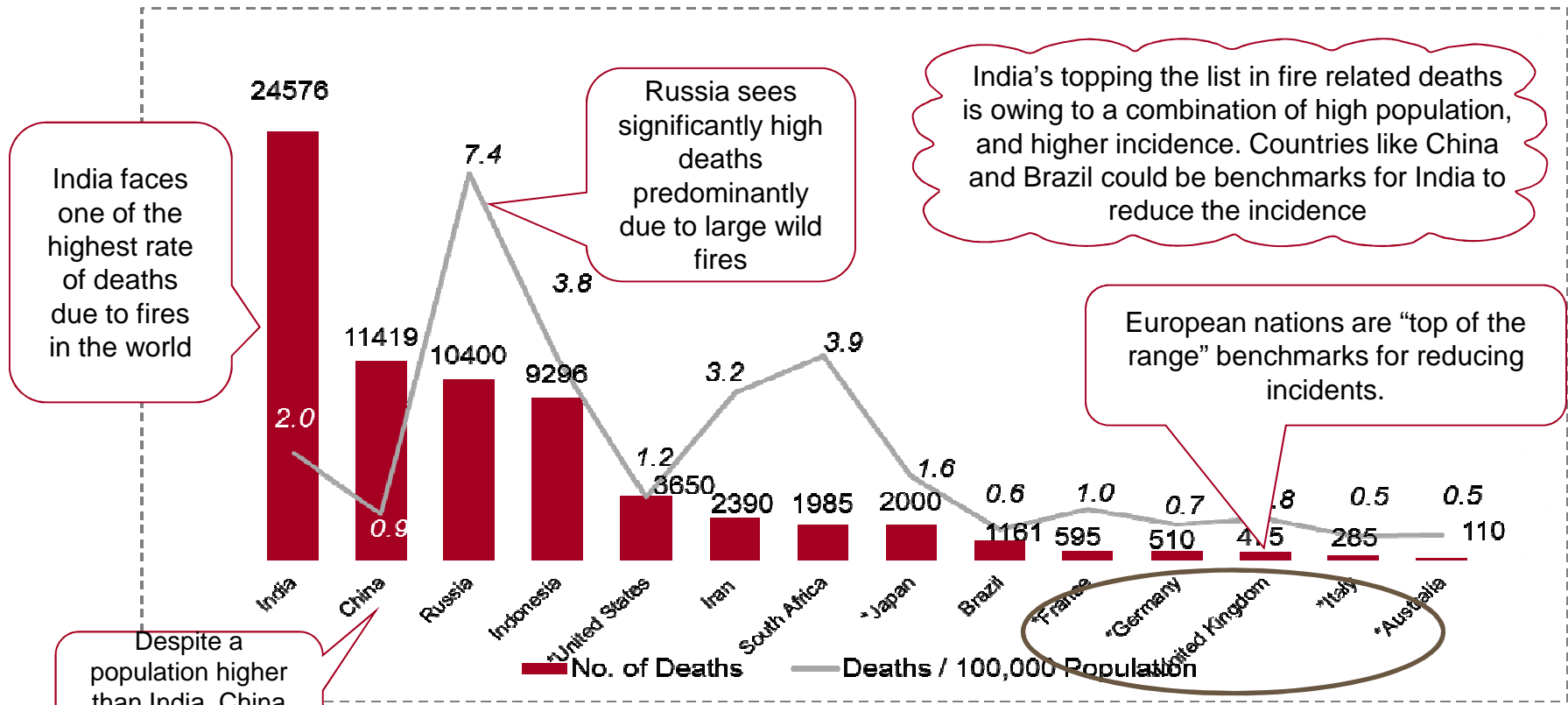
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- 11000 people died in 2014 due to electrocution and fire due to Electrical Short Circuits i.e. 31 people die every day
- 42 % of fires occur due to electrical sources
  - Short Circuit and inferior products
- 8% of deaths that occur in factories are due to electricity.



Source: National Crime Records Bureau report 2014

# Electrical Accident Statistics



Source: National Crime Records Bureau, NFPA , The Geneva Association- World Fire Statistics 2011, Avalon Consulting Analysis

# Why does this Happen ?

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# FIRE CAUSES IN BUILDINGS

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# Electrical safety Core issues

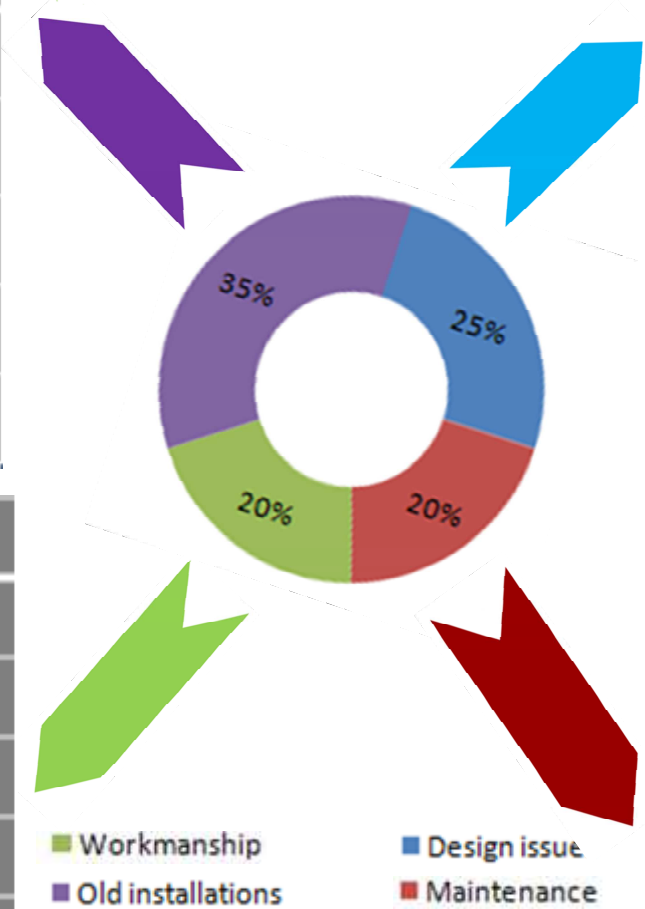


### Old Installations

- Addition of loads- Modification
- De gradation of insulation & Components - Ageing
- Poor maintenance practices
- Technology up gradation
- Obsolescence of components

### Workmanship

- High attrition due to globalization
- Training & Skill level
- Multi skill level – Non competence person
- Outsourcing
- Maintenance Man power Vs Cost reduction



### Design Issues

- Code violations
- Competent designer
- Adequate sizing
- Selection of reputed make
- Cost reduction
- Co ordination among various Departments
- Active & Passive fire systems
- Protective device co ordination

### Maintenance issues

- Work force Availability
- Outage based maintenance practices
- People skill level
- Predictive maintenance (Thermographic survey)
- Obsolescence of components

# Electrical Safety Standards / Codes and Regulations in India

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- NBC 2005(under revision 2016)
  - IS 732 – Code of Practice for wiring installations (under revision)
  - IS 2309 - Code of Practice for protection against lightning (under revision)
  - IS 3043 - Code of Practice for earthing
  - IS 4648 - Guide for Electrical layout in residential buildings
  - SP 30:2011 – National Electrical Code
- Central Electricity Authority (CEA) Regulations : “Measures relating to Safety and Electric supply ” 2010
  - Rule 14 – Switchgear in the Consumer premises
  - Rule 17,18 & 19 – Basic protections
  - Rule 41 (xv) – Earthing system
  - Rule 42 - Earth Leakage protection devices
  - Rule 12 (2) - Code of Practice of BIS or National Electric Code, if any, may be followed to carry out the purpose of this regulations & in the event of any inconsistency, provision of these regulation shall prevail



# Where are the missing links??

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- Compromise between Electrical safety and Installation Cost?
  - Poor implementation of standards and codes
  - Legal Enforcement
    - Poor Enforcement
    - Low Penalty values
    - Lengthy Judicial process
    - Inadequate manpower strength to enforce
  - Lack of awareness with the consumer?
  - Collective efforts by electrical safety advocates and stakeholders?

# ICA's Building Wire Initiative

# International Copper Association & Copper Alliance



- Leading non profit organization for promoting the sustainable use of copper worldwide
- 26 Copper Alliance Centres World Wide
- 36 global-level member companies



COPPER ALLIANCE IS ACTIVE IN NEARLY 60 COUNTRIES

Asia  
Australia  
Bangladesh  
Brunei Darussalam  
Cambodia  
China  
India  
Indonesia  
Japan  
Laos  
Malaysia  
New Zealand  
Papua New Guinea  
the Philippines  
Saudi Arabia  
Singapore  
South Korea  
Sri Lanka  
Taiwan  
Thailand  
the UAE  
Vietnam

Ghana  
Green  
Hungary  
Italy  
Luxembourg  
Netherlands  
Nigeria  
Poland  
Romania  
Russia  
Senegal  
Slovakia  
South Africa  
Spain  
Sweden  
Ukraine  
United Kingdom

**Latin America and the Caribbean**

Argentina  
Brazil  
Chile  
Colombia  
Dominican Republic  
El Salvador  
Mexico  
Peru

**North America**

Canada  
United States of America

**Europe and Africa**

Belgium  
Bulgaria  
Cyprus  
Czech Republic  
Finland  
France  
Germany

# ICA's STRENGTHS

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- ICA is a **knowledge-based** organization that has the expertise and ability to implement market transformation projects
  - ICA accesses **extensive networks** that bring together the full spectrum of stakeholders in:
    - The energy supply chain
    - Policy-makers/ regulators
    - Manufacturers
    - Sustainable energy advocates
    - End-users
  - ICA Provides a **platform** that represents a '**non-commercial**' voice backed by a group of independent and credible experts

# ICA India Role



National Standards & Codes

Regulation

Government

- Influence standards as member of ET20 Committee of Bureau of Indian Standard
- Partner Rural Electrification Corporation of India for developing and implementing standard wiring specification for rural dwellings

Market Transformation

Promotion of Comfort / Convenience

Consumer

- Conduct Programs for electricians
- Develop National Database for certified Electricians and Contractors
- Influence decision makers i.e. Elect. Consultants, Architects, Builders etc.

Product Council

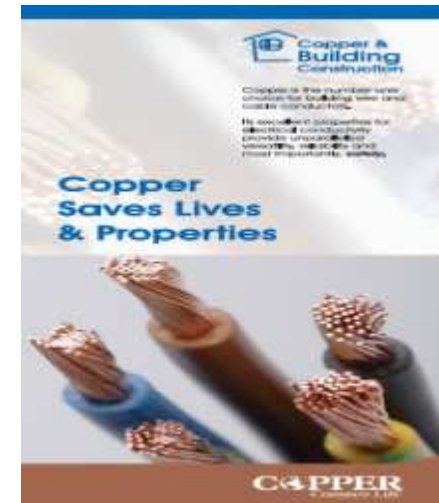
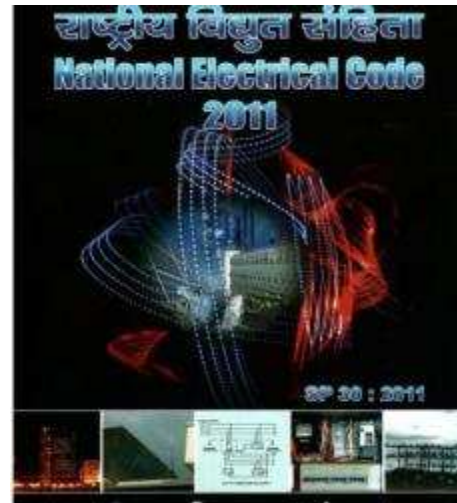
Supply chain

- Support Wire Purity Initiative
- Engage more Wire Manufacturers
- Resource support for consumer education

# ICA India engagement with different Govt. & Non Govt. Agencies



- Revision of National Standards and codes as per international standards
  - National Building Code
  - National Electrical Code
- Tie-up with various Government agencies and association advocating best practices in electrical wiring & Accessories
  - Bureau of India Standards (BIS)
  - Central Electricity Authority
  - Rural Electrification Corporation of India
  - Central Public Works Department, etc.



# Follow up action post FISUEL meeting in India

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## ICAI-CEA, National Workshop on Electrical Safety 10th Feb 2015 Delhi

- **Objective:**
  - To Enhance Electrical Safety Environment in India, while adhering to National Regulatory Provisions, Codes and Practices.
- **Participation Profile:**
  - Senior Officials associated with State electrical safety implementation bodies like Chief Electrical Inspectorates, State Public Works Department, Central Public Works Department, and also experts in the field of Transmission and Distribution utilities of Central, State & Private Sector under one roof.
- **Outcome**
  - Central Electricity Authority of India issued a notification on 13th April 2015 directing all states to notify a panel of Chartered Safety Electrical Engineers who will certify Residential and small commercial installations (which was missing in CEA regulation earlier)



# “Pure for Sure” Campaign in India



## All India Wire Test Program

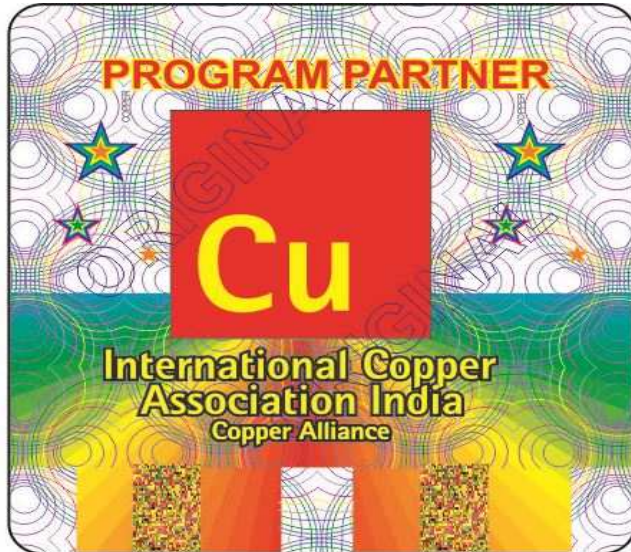
- Progress Status:
  - Completion of all India wire Test,
    - Total No of Samples- 68
    - Purchases from Authorized Dealers, Distributors & Retailers with Tax Invoice
    - Tests to be conducted
      - Conductor resistance test
      - Thickness test
      - H.V. D.C test
      - Copper purity test
      - Oxygen index test
  - All Test cleared by Product council members
  - Regional Snapshot

Region	Wire Purity	Conductor Resistance	High Voltage Test DC	Oxygen Index	Insulation Thickness
North	High	Moderate	Moderate	Moderate	High
South	Moderate	Moderate	High	High	Low
East	Moderate	Low	Moderate	High	Moderate
West	Low	High	Moderate	Low	Moderate



# “Pure for Sure” Campaign in India

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- Use of ICA Hologram on wire box by all product council Members,
- Use of ICAI Logo on promotional material, advertisements, and Websites of product council Members
- Media Promotion of ICAI Hologram - Agenda 2015

The advertisement has a dark blue background. At the top is the Polycab logo, a power symbol above the word 'POLYCAB'. Below it is the headline 'Bettering Our Best'. A paragraph of text describes Polycab as the largest cables and wires manufacturer in India, mentioning ISO 9001:2008, ISO 14001:2004, and OHSAS 18001:2007 certifications. To the right is a white silhouette of a climber on a mountain slope. Below the climber are three orange flags with text: 'WORLD-CLASS MANUFACTURING FACILITIES', 'WIDEST RANGE OF CABLES &amp; WIRES', and 'CONSISTENT QUALITY ACROSS PRODUCT RANGE'. At the bottom left is the ICAI logo. At the bottom right are two gold award medals: 'POLYCAB' and 'CREDAT'. Below the medals is a red seal that says 'SELECTED Superbrand INDIA 2014-15 Consumer Validated'. At the very bottom, it says 'POLYCAB WIRES PVT LTD.' followed by corporate office details, contact numbers, and social media links for Facebook, Twitter, and LinkedIn.

# Skill Upgradation

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## Electricians & Elect. Contractors Certification & Registration Scheme

- Successful Launch of Contractors Registration Scheme in association with Ascertiva,
  - Organized 4 Certification programs 2 in each in Mumbai & Delhi,
  - Certificates Issued to 70 Candidates
- Stakeholders Feedback on Contractors Registration Scheme
  - Product Council Members
    - Appreciation from product council Members for Electricians Certification initiative by ICAI & Ascertiva
  - Licensing Authority – Public Works dept. Maharashtra state
    - Officials to attend upcoming training program in Mumbai, and issue guidelines for satisfying qualification criteria to get PWD accreditation,
    - Proposed partnership by “National Skill Development Corporation of India”
    - MOU Signed with Just Dial to register the Certified Electricians



# Skill Upgradation

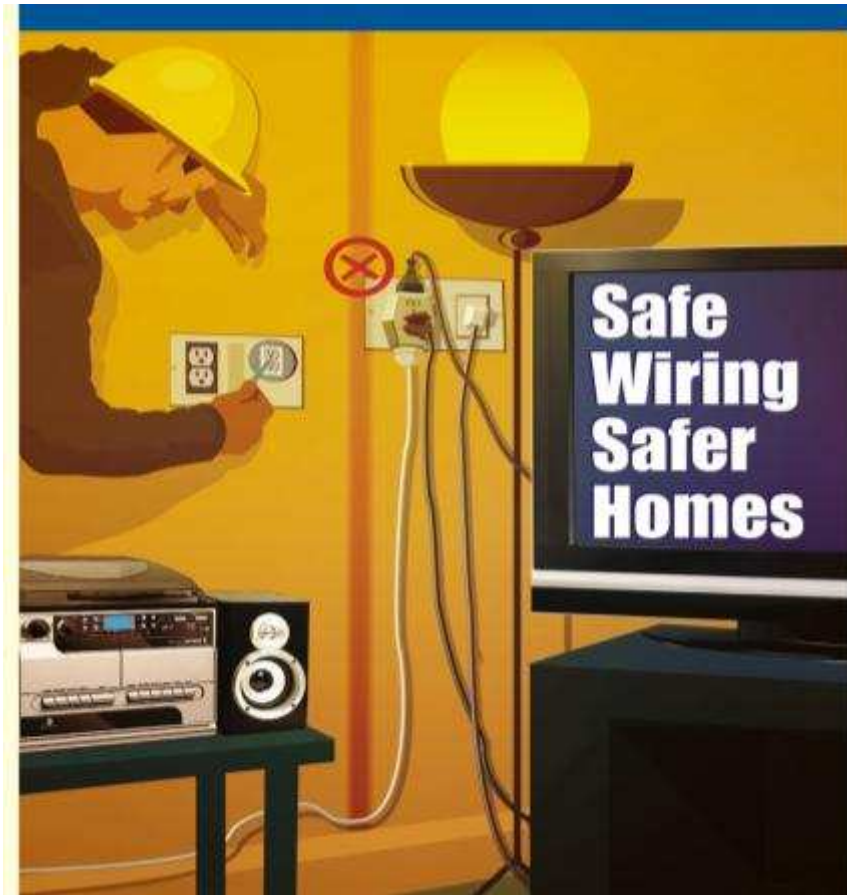
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## ITI Syllabus - Upgraded

- Industrial Training Institutes (ITI) governed by Ministry of Labour - Govt upgraded National ITI syllabus for certification program of tradesman (Electrician and Wireman)

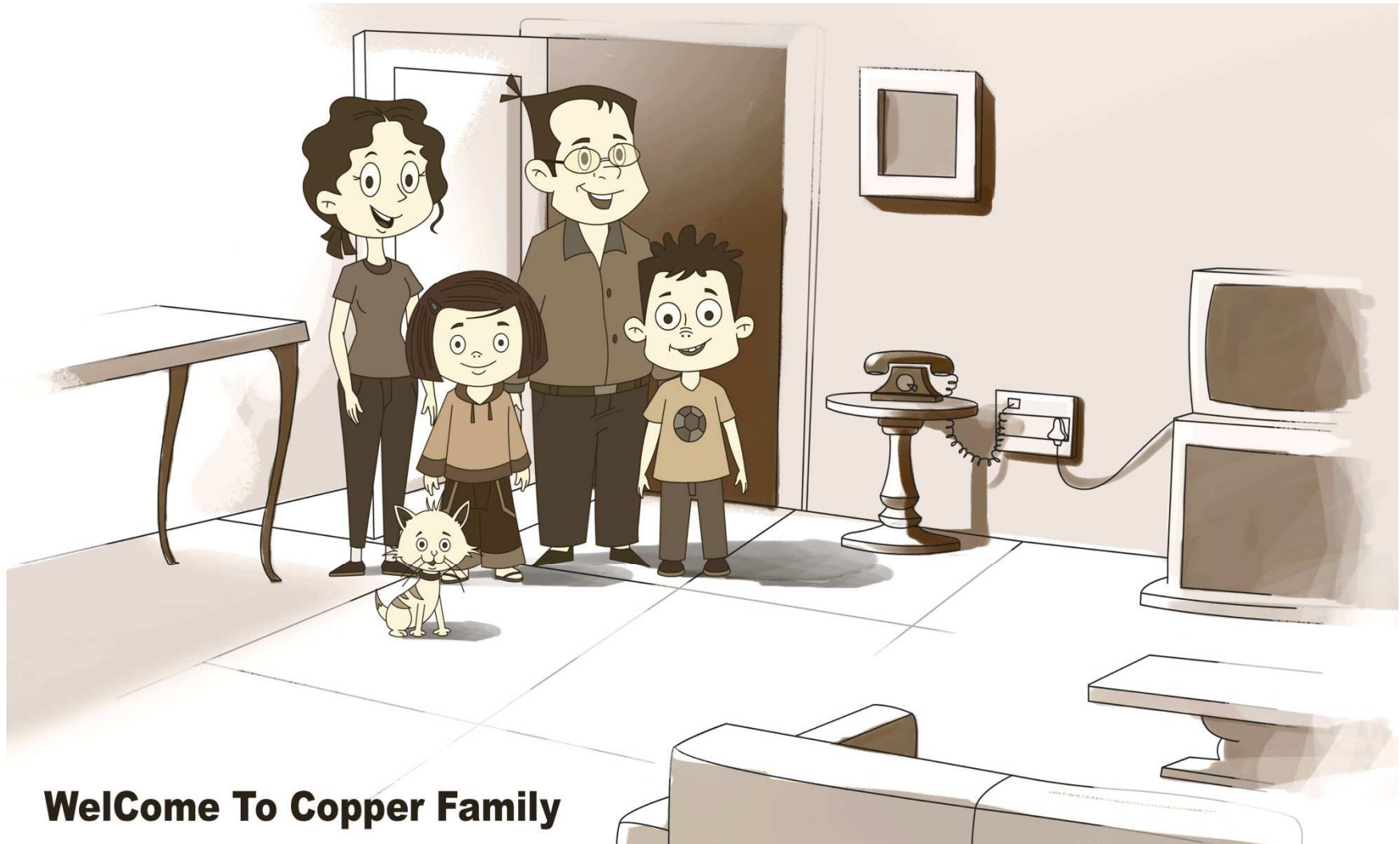
## Electrical Training Program

- Annually 200+ training programs
- Message of Electrical Safety and Best House Wiring Practices reached 17,000 wiremen & electrical consultants



# Electrical Safety Promotion Campaign

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# Electrical Safety Promotion Campaign



## Annual Exhibition organised by Economic Times targeted specifically to Architects, Builders, Developers, & Building Community.

- **Objective:** To generate awareness amongst Building Construction Industry on Safe Electrical installation practices and Energy Efficiency in Buildings.
- Awareness on Electrical safety tips for Direct End users,
- Active participation and display by all five partners with average footfall of 250 people per day (based on consumption of reading material)
- Target Audience: Architects, Contractors, Project related people, Architectural & Interior designer students, End users (Consumer), etc.



# Electrical Safety Promotion Campaign

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## National Electrical Code of India , promotion campaign 2014

- Successful completion of 16 Cities Campaign
- Objective of seminar: To enhance Electrical Safety amongst key constituents of building industry and industry stakeholders, through nationwide awareness campaign about key provisions in revised National Electrical code of India 2011.
- The campaign were supported by agencies like “Bureau of Indian Standards – BIS ”, Institution of Engineers UP & Bihar state centers
- Seminars attended by Electrical Engineers of all key government depts. like State Chief Electrical Inspectorate, Public Work Dept. State Electricity Board, , also attended by Electrical Consultants, A Grade Electrical Contractors, Educational Institutions Electrical dept. head, Architects, etc.



# Whom do we work with ?

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## Regulators, Codes and Standards



Bureau of Energy Efficiency



Bangladesh Standards & Testing Institution



## Supply Chain / Partners



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# Thank you

For more information please contact