

the leading electrical & electronics monthly

ieema journal

VOL 17 • ISSUE NO. 1 • SEPTEMBER 2025

PGS. 108

ISSN 0970-2946 • ₹100/-

ELECTRIC VEHICLES USD 200 BILLION OPPORTUNITY

OTHER STORIES:

- SPECIAL FEATURE: Battery Storage
- FOCUS: Ensuring India's BESS Auctions Momentum Translates to On-Ground Success; Growing E-Mobility Market Spurs Copper Demand
- INSIGHT: High-Efficiency Open-Chamber Contactors for EVs and Energy Storage

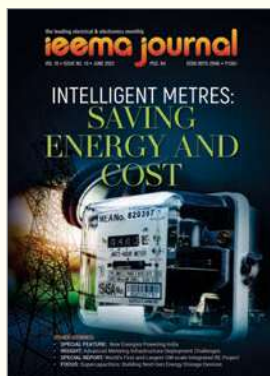
the leading electrical & electronics monthly

ieema journal

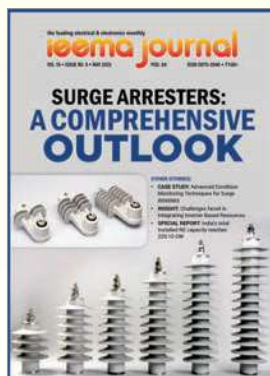
JULY 2025



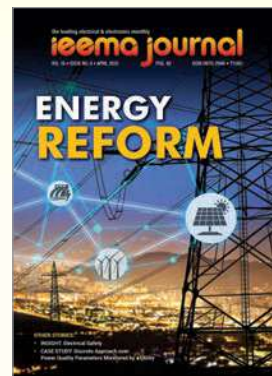
JUNE 2025



MAY 2025



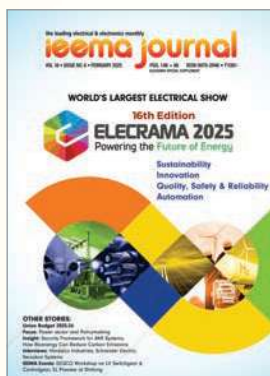
APRIL 2025



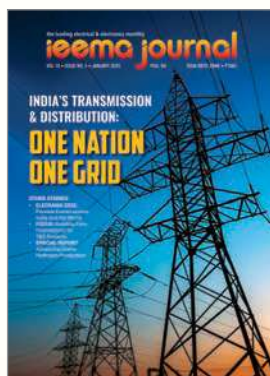
MARCH 2025



FEBRUARY 2025



JANUARY 2025



DECEMBER 2024



THE MONTHLY DEVOTED TO ELECTRICAL AND ELECTRONICS INDUSTRY

National Subscription rates including postage

| No. of Issues | Subscription Price |
|--------------------|--------------------|
| 12 Months/ 1 Year | ₹ 1000/- |
| 24 Months/ 2 Years | ₹ 1800/- |
| 36 Months/ 3 Years | ₹ 2400/- |

Kindly allow four weeks for delivery of the first issue
International: US \$120 (Air-mail)

For Advertisement, contact:

Mr. Prakash Powar

Mobile: 99700 77977 | Call: 91 22 24932705 | Email: journal@ieema.org

Indian Electrical & Electronics Manufacturers' Association

Established in 1948

Powering India with specialized transformers

First Indian manufacturer to have **E3, C3, F1** certifications!
for Cast Resin Transformers.



» Our specialized offering

Cast Resin Dry Type Transformers
(upto 20 MVA, 33kV Class)

Oil Filled Transformers
(upto 50 MVA, 145kV Class)

**Vacuum Pressure Impregnated
Dry Type Transformers**
(upto 15MVA, 17.5kV Class)

Product Offerings

- Cable Accessories
- Cable Management Solutions
- ABC Accessories
- Enclosures
- Transformers
- Covered Conductors
- Surge Arrester
- Electrical Safety
- Gas Metering Solutions
- ELPS
- Solar Products
- EV & BESS Bus Bars

🌐 CIC@raychemrpg.com
🌐 www.raychemrpg.com
☎ 022 4574 5060

nVent ERIFLEX Flexbus

Flexible Power Connection Solution, Now with Rodent and Termite Protection!

Keep Your Electrical Infrastructure Safe with Rodent & Termite Protected nVent ERIFLEX Flexbus Conductors

Our innovative nVent ERIFLEX Flexbus Conductor addresses a critical need for environments where pests, rodents, and termites pose a significant risk to electrical infrastructure. Designed for easy, one-sided use with direct connection to a busbar or circuit-breaker palm, it incorporates a rodent and termite repellent additive in the outer sheath, offering several benefits.



Non-toxic, non-hazardous, & environmentally friendly



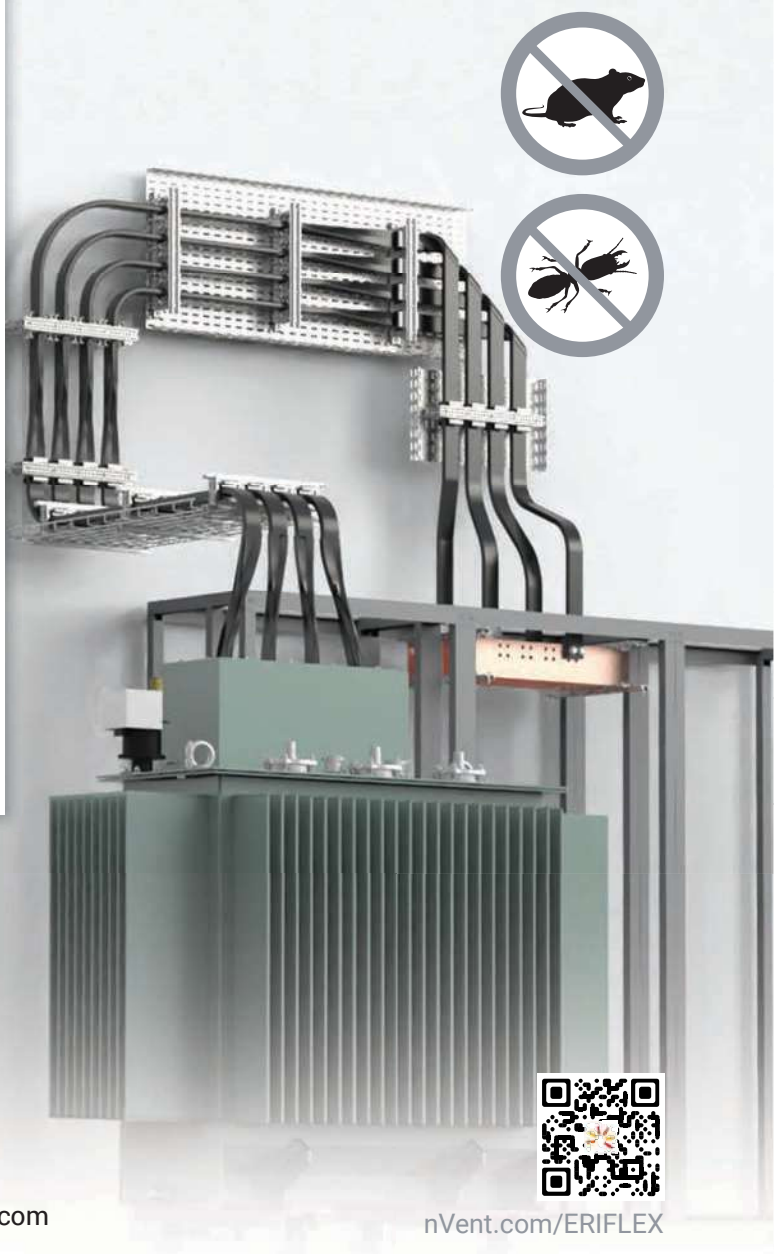
Complies with **REACH** and **RoHS** standards, verified by SGS



Tested according to the GB/T 34016-2017 Chinese standard for rat and termite proof wires and cables, with tests by the China National Center for Quality Supervision and Test



Effectiveness against insects confirmed by **BAM Germany (DIN EN 117)** and against rodents by **Texas A&M University (TAMU)**



For more details, contact us at:
ElectricalConnections.APAC@nvent.com

© 2024 nVent. ERIFLEX-AD-N02477-IEEMAMagazineFlexbusSystem-UKEN-2409

nVent.com/ERIFLEX

ONE-STOP SHOP EPC COMPANY

SALASAR TECHNO ENGINEERING LTD.

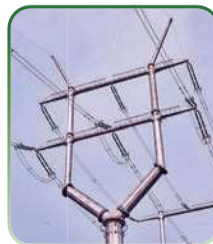


**66kV D/C Multi Level Tension/
Dead End Pole**
MPSEZ Utilities Ltd., Mumbai



**220kV Multi Circuit Tension/
Dead End Dual Pole**

MSETCL (Maharashtra State
Electricity Transmission
Company Ltd.), Mumbai



**400kV Double Circuit
Tension Dead End Y-Pole**

MSETCL (Maharashtra State
Electricity Transmission
Company Ltd.), Mumbai



**400kV S/C "Tension/Dead
End" Y-Pole**

PGCIL (Power Grid
Corporation of India Ltd.),
Lucknow



**220kV Double Circuit
Cable Termination Pole**

MSETCL (Maharashtra State
Electricity Transmission
Company Ltd.), Mumbai



**Asia's Widest Galvanizing
Facility*** with Unmatched
Throughout



Leading Player in
**Monopoly Infrastructure
Solutions**



**3 State-of-the-art
Manufacturing Units**
Spread Across 30+ Acres



**30mm Mild Steel
Bending Capacity** with
High-Precision Machinery



**200,000+ MTPA Installed
Capacity** for Large-scale
Execution



**In-house Quality Labs –
Certified with ISO,
OHSAS, CPR** and Other
Standards to Ensure
Safety and Regulatory
Compliance.

* As per our sources

ENGINEERING • PROCUREMENT • CONSTRUCTION • MANUFACTURING • GALVANIZATION

Salasar Techno Engineering Ltd.

☎ 0120-648-8470

✉ marketing@salasartechno.com

🌐 www.salasartechno.com

Dayanand Swamy Kuna

FIE, C.Eng, President / CEO (EPC & Sales And Marketing)

☎ +91-83299-40086 • +91-99608-97384

✉ dayanand.kuna@salasartechno.com

dayanand.kuna@gmail.com

Contents

Volume 17 • Issue No. 1 • September 2025

CIN U99999MH1970GAP014629

Official Organ of Indian Electrical & Electronics
Manufacturers' Association

Member: The Indian Newspaper Society

From the President's Desk 10
Samvaad 11

For suggestions and feedback, please write
to us on editor.ieemajournal@ieema.org

COVER STORY

Electric Vehicles in India: USD 200 Billion Opportunity 12

India plans to aggressively move towards electric mobility and seeks to attain a 30 percent share of electric vehicles (EVs), in the total vehicles sold, by 2030. Sale of EVs in India went up to 2.08 million in 2024 as against global EV sales of 18.78 million in the same year. India's EV penetration, although slow, has been picking up and continues to show an increasing trend. The National Mission on Electric Mobility and specific schemes such as FAME and PM e-Drive have been introduced to further the adoption of EVs. This report explores India's progress on these initiatives, identifies current barriers, and presents a way forward with recommended approaches and actions to accelerate the pace in the years ahead.



THINK TANK



"Growth in passengers charging EVs, using fast highway charging stations, has reduced range anxiety." 37

- Mustafa Wajid, Chairman,
IEEMA E-Mobility Division

SPECIAL FEATURE

For the Life of Batteries 42

The first part of this special feature explores the rapidly growing need of energy storage in India, its importance, applications, followed by the BESS market overview noting the demand, supply, growth story and status of raw materials, to conclude the initial part with a BESS industry outlook. The second part of the special feature outlines the core theme of variable renewable energy, mitigation strategies, as shared in essence by IEEMA RE & Storage division Chairman, Shaji John.

FOCUS

Ensuring India's BESS Auctions Momentum Translates to On-Ground Success 61

Focus on innovation, technology performance, and not just rampant deployment will define India's storage success story in this decade and the next, writes renewable energy sector professional **Abhishek Kumar Shukla**.



Growing E-Mobility Market Spurs Copper Demand 76

The Indian market is seeing a surge in the demand of EV vehicles that has led to a rising demand of copper, says **Mayur Karmakar, Managing Director, The International Copper Association India**.

INSIGHT

High-Efficiency Open-Chamber Contactors for EVs and Energy Storage 53

As DC systems now support megawatt-scale applications – like fast EV charging hubs and grid-scale battery energy storage – demands on switching components have grown sharply. This whitepaper presents bi-directional open-chamber DC contactors as a robust, future-ready solution for high-power DC networks.

CASE STUDY

Reviewing Material Development Strategy for Long Cycle Life of LFP Prismatic Cell 65

Salahuddin Ahamad, Nav Deepak, Garima Chaturvedi, Pratap Sharma, Changsik Kim, Shinya Wakita from the Department of Cell R&D, Exide Energy Solution Limited, present a review addressing the strategy of material development for long cycle life LFP prismatic cells for BESS application.

IEEMA ACTIVITIES

Meeting with Joint Secretary (Distribution), Ministry of Power 80

IEEMA Divisional Leadership Meet – DIVCON 80

Capacity Building Programme on Distribution Transformers Repair and Maintenance 81

EVS Connect Meet – ‘Sustain Next: The Startup Industry Confluence’ 84

Plant Learning Expedition 85

Reliability Engineering for Electrical Industry Professionals 86

Unlocking Export Potential – Market Access Strategy & Future Opportunities in the Electrical Sector 87

Country focus: The Netherlands (Europe); Saudi Arabia; Australia

Technical Seminar on Transformers, Switchgears, Control Panel, Bus Ducts, Harmonics & Energy Efficiency 90

CT PT Webinar for COSMA Members 91

Training Programme on Latest Trends in Switchgear & Performance Verification Tests 92

Web Series – Surge Arresters Tutorials 92

IEEMA's New Kolkata Office 93



POLICY UPDATES 94

- Cabinet approves investment proposal for 700 MW Tato-II HE project in Arunachal Pradesh.
- SECI conducts first-ever auction for procuring green ammonia under NGHM.
- India achieves milestone of 100 GW solar PV module manufacturing capacity under ALMM.
- MNRE issues amendment to ALMM order for solar PV cells.
- Shri Manohar Lal chairs meeting of Consultative Committee of Parliament Members for MoP to discuss grid scale energy storage systems.
- MNRE issues amendment for mandatory use of major WTCs from listed manufacturers.

NEWS

NATIONAL 97

- MoP issues draft rules for compliance under Energy Conservation Act.
- KSERC approves KSEBL plan for 125 MW BESS.
- NTPC to invest Rs800 billion in RE projects in Telangana.
- Foundation stone laid for Powergrid's Kudankulam Unit-3 and 4 at Rs5.5 billion.
- NPCIL commissions solar plant in Haryana.
- Rajasthan Government approves land for 765 kV substation in Jaisalmer.
- Telangana Government inaugurates Yadadri thermal power plant Unit-II.
- KERC notifies Karnataka Electricity Distribution Code) Regulations, 2025.
- Odisha requests Rs30.69 billion under RDSS for distribution infra upgrades.
- NREL commissions 6 MW wind capacity under Dayapar hybrid project.
- Powergrid to raise up to Rs50 billion through private placement of bonds.

INTERNATIONAL 98

- South Korea and Vietnam sign MoUs for RE and nuclear power cooperation.
- Afghanistan secures US\$ 10 billion agreement for 10,000 MW generation.

CONTENTS

- Emerge and EDB sign MoU to develop solar projects in UAE.
- Portugal to explore electricity interconnection with Morocco to boost grid security.

CORPORATE 98

- Avaada to develop 1 GW clean energy projects in Bihar at Rs50 billion.
- CleanMax files DRHP with SEBI for IPO.
- Gentari partners with UltraTech for to commission hybrid RTC RE project.
- JSW Energy commissions Units I and II of 240 MW Kutehr hydro plant.
- Waaree Energies commences production at ITS Gujarat manufacturing facility.
- L&T secures EPC order for BESS-integrated 116 MW solar project.
- Hindustan Power signs PPA with UPPCL for 435 MW DC solar project.
- Inox Green signs agreement for comprehensive O&M of 182 MW wind projects.
- AIIB invests Rs13.01 billion in ABCL.

POWER STATISTICS 100

- Global Scenario 100
- Indian Scenario 101

IEEMA DATABASE 102

- Basic Prices and Indices 102
- Production Statistics 103

PRODUCT SHOWCASE 104

AV Automatic Transfer Switch for Seamless Power 104

Voltage Measurement Tool for Solar Panels and Solar Inverters 104

AD INDEX 105

SHOCKS & SPARKS 106

Famous Feasts – By RG Keswani 106

For subscription and advertisement queries, write to: journal@ieema.org

Edited, printed and published by Ms. Charu Mathur on behalf of Indian Electrical and Electronics Manufacturers' Association, and printed at Indigo Press (India) Pvt Ltd, Plot No. 1C/716, Off Dadoji Konddeo Cross Road, Between Sussex and Retiwala Industrial Estate, Byculla (E), Mumbai-400 027, and published at 501, Kakad Chambers, 132, Dr. Annie Besant Road, Worli, Mumbai 400 018.

EDITORIAL BOARD

ADVISORY COMMITTEE

| | |
|---|--|
| Founder Chairman The late RG Keswani | Chairman Sunil Singhvi |
| Members Sunil Singhvi Rohit Pathak A Naveen Kumar | R Krishnakumar Mustafa Wajid Atul Arya Imteyaz Siddiqui |
| Editor Charu Mathur | Statistics & Data Incharge Ninad Ranade |
| Printed at Indigo Press (India) Pvt Ltd | Designed by Varghese Sakariya |

Registered Office – Mumbai
501, Kakad Chambers, 132, Dr A Besant Road, Worli, Mumbai 400 018.
Phone: +91(0) 22 24930532 / 6528
Fax: +91(0) 22 2493 2705 • Email: mumbai@ieema.org

Corporate Office – New Delhi
Rishyamook Building, First floor, 85 A, Panchkuian Road, New Delhi 110001.
Phone: +91 (0) 11-23363013, 14, 16
Fax: +91 (0) 11-23363015 • Email: delhi@ieema.org

Branch Office – Bengaluru
K Seetharaman, Assistant Director
State Head – Karnataka, Kerala and Tamil Nadu
Regional Representative-Southern Region
Mobile: +91 99800 04982
Email: k.seetharaman@ieema.org

Branch Office – Kolkata
Sanjoy Mukherjee, Regional Representative-Eastern Region
Mobile: +91 98308 50757
Email: sanjoy.mukherjee@ieema.org

Website: www.ieema.org

Articles: Technical data presented and views expressed by authors of articles are their own and IEEMA does not assume any responsibility for the same. IEEMA Journal owns copyright for original articles published in IEEMA Journal.

STATE HEADS

Rajesh Parab
Senior Executive Officer & State Head-Maharashtra
Mobile: +91 97022 69598
Email: rajesh.parab@ieema.org

Anuj Kumar Chaturvedi
State Head-UP, Uttarakhand & MP
Mobile: +91 98396 03195 / 95191 38844
Email: anuj.chaturvedi@ieema.org

Ashish Vikram
State Head-UP
Mobile: +91 98733 05589
Email: ashish.vikram@ieema.org

Omkar Pradhan
State Head-Gujarat
Mobile: +91 98199 06433
Email: omkar.pradhan@ieema.org

Mohammad Irfan Parray
State Head-Jammu & Kashmir
Mobile: +91 98584 55509
Email: Irfan.parray@ieema.org

Nilankha Chaliha
State Head-North East
Mobile: +91 97063 89965
Email: nilankha.chaliha@ieema.org

Rajnish Kaushik
State Head-Haryana, Punjab, Himachal Pradesh & Chandigarh
Mobile: +91 99911 10246
Email: rajnish.kaushik@ieema.org

Sairam Rayepeddi
State Head-Hyderabad
Mobile: 9642345691
Email: sairam.rayepeddi@ieema.org