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INDIA'S POWER & DISTRIBUTION TRANSFORMERS TRANSFORMING TO AN ENERGY EFFICIENT FUTURE

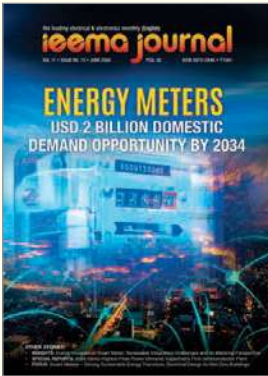
OTHER STORIES:

- **FOCUS:** Efficient & Futuristic Transformer Plants; Standardised Occupational Safety Provisions on PTs
- **INSIGHTS:** Overcoming Retrofitting & Refurbishing Challenges in Large PTs; Negative Tan Delta of a PT; Condition Assessment Techniques of OIP & RIP Transformer Bushings

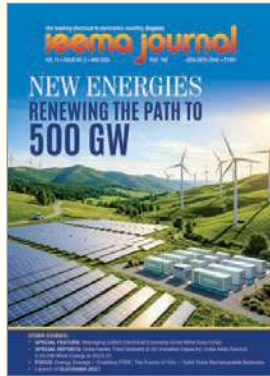
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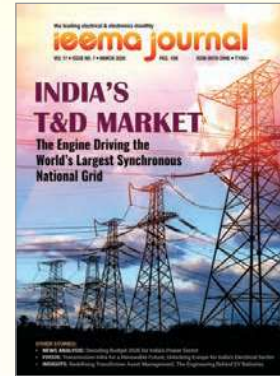
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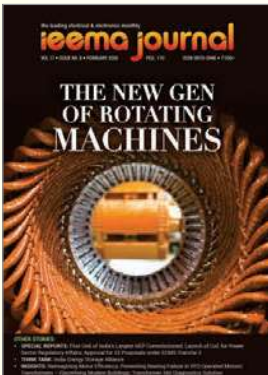
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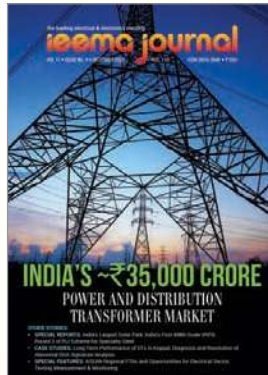
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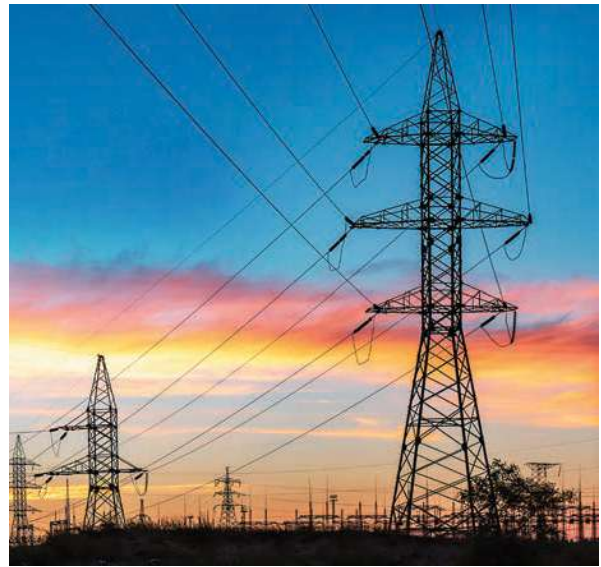
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COVER STORY

India's Power & Distribution Transformers: Transforming to an Energy Efficient Future 12

With the global transition towards clean energy, expansion of power infrastructure, grid modernisation, increasing electricity demand and ageing transmission systems, there is a swelling need for new transformers world over. The coming decade represents a landmark opportunity for the Indian power and distribution transformer industry. Investments in advanced materials, smart monitoring technologies, indigenous manufacturing capabilities, and world-class quality systems will enable India's transformer manufacturers to meet the evolving needs of utilities worldwide.



FOCUS
Efficient & Futuristic Transformer Plants 44



This paper by **Shridhar Gokhale** and **Rajeev Shevgaonkar** of **North Star Electricals** along with **Dr. Mrunal Deshpande**, **Professor & Head of Marathwada Mitra Mandals College of Engineering**, and **Ramchandra Vinayak Markale**, **independent management consultant**, focuses on aspects of a transformer manufacturing facility. It presents key elements of plant engineering, broad technical requirements of various types of equipment, and concepts and logics for selecting a particular type over other options.

Mandating Standardised Occupational Safety Provisions on Power Transformers 61

Girish Ramesh Nimbawar, **Jayesh Magrde**, and **Vivek Pawar** of **CG Power**, highlight critical safety risks encountered while working on transformers and identify practical, feasible provisions that can effectively mitigate them. They further emphasise the need for uniform safety guidelines across the industry, proposing that these provisions be progressively standardised within transformer specifications.





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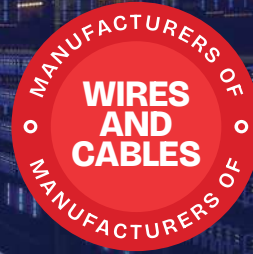
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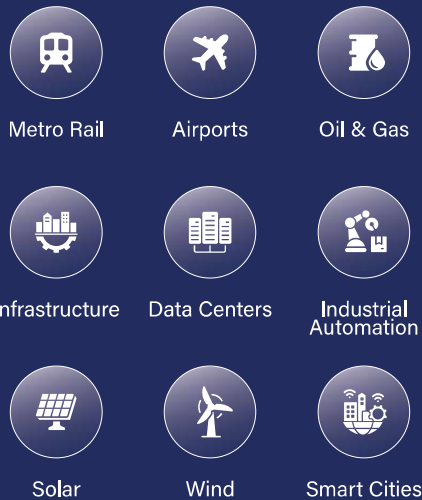
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INSIGHTS

Large Power Transformers: A Strategic Approach to Overcome Retrofitting & Refurbishing Challenges 30

This paper by Nilesh Meshram and Komelabbas I Lakhani of Siemens Energy India Limited explores retrofitting and refurbishment as practical alternatives to full replacement. It reviews current literature and presents a detailed case study of a 65-year-old transformer to highlight real-world challenges and proposes actionable strategies including standardised transformer designs, shared spare part reserves, and stronger collaboration between utilities and government agencies.

Negative Tan Delta of a Power Transformer – Phenomenon, Causes, and Diagnostic Considerations 57

This paper by Ghanshyam Lalwani, AGM (TRE-Power Transformer), BHEL Jhansi, examines the phenomenon of negative tan delta in power transformers, its physical meaning, measurement principles, possible causes, and diagnostic significance. Practical case observations and recommendations for interpreting such results are presented, with the objective of preventing misdiagnosis of healthy equipment and ensuring effective insulation monitoring.

Condition Assessment Techniques of OIP & RIP Transformer Bushings 68

Gautam Nikam and Pramod Rao of Yash Highvoltage review and describe various health monitoring and condition assessment techniques adopted by various users and recommend sequence of tests and evaluation methods.

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- Guidelines for quantifying GHG emissions from offsite water drawl and treatment.
- 75 lakh households targeted for rooftop solar installations by December 2026.
- 14th meeting of India-Philippines Joint Working Group on Trade and Investment held in Manila.
- General implementation timelines for ISTS projects.
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- POWERGRID approves SCADA upgrade and JPY 80 billion loan facility.
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