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THE ENERGY PULSE

Insight to Efficiency & Sustainability

Issue no.: 003

MESSAGE FROM CHAPTER PRESIDENT



Dear Members and Friends,

It is my pleasure to present the third issue of the **AEE Pune Chapter Newsletter**, released on **World Environment Day**. This day serves as a timely reminder of our shared responsibility to promote sustainable practices and drive positive environmental change through innovation, collaboration, and leadership.

This issue is particularly special as it features messages from two distinguished leaders of the AEE community—the **International Director of Membership Development Dr. LJ Grobler** and the **President of AEE Kolkata Chapter Dr. Krishna M Agrawal**. Their valuable perspectives reflect the growing strength of the AEE network and the importance of working together to advance energy efficiency and sustainability worldwide.

In our **Knowledge Corner**, we bring you an insightful article, *"Modular UPS Systems with Intelligent Parallel Design: Enhancing Reliability and Energy Efficiency,"* which explores innovative approaches to improving power system reliability while optimizing energy performance.

We are also pleased to launch a new special series, **"Energy, Environment and Waste Management,"** aimed at sharing knowledge and best practices on some of the most pressing sustainability challenges of our time. We hope this series will inspire learning, discussion, and action among our members.

As always, the newsletter includes highlights of chapter activities, member engagement initiatives, and important developments from the energy sector through our **Energy News** section.

I thank all contributors, volunteers, and readers for their continued support. Wishing you an informative and engaging read.

Vinay Gadikar
President, AEE Pune Chapter

MESSAGE FROM AEE INTERNATIONAL DIRECTOR OF MEMBERSHIP DEVELOPMENT



Dear AEE Pune Chapter Members,

Greetings from South Africa.

Firstly, I would like to congratulate the AEE Pune Chapter leadership and editorial team on producing an excellent chapter newsletter. The quality of the content, the technical insights, updates on global energy developments, and the emphasis on professional growth reflect a vibrant and engaged chapter committed to advancing energy efficiency and sustainability. The newsletter demonstrates the important role your chapter plays in developing future energy leaders and strengthening the global AEE community.

As International Director of Membership Development for the Association of Energy Engineers (AEE), it gives me great pleasure to invite you to join us at the AEE Africa Energy Conference & Exhibition, taking place on 28–29 October 2026 in Cape Town, South Africa.

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MESSAGE FROM PRESIDENT, AEE KOLKATA



Dear Members, Energy Professionals, Industry Leaders, and Esteemed Readers, it gives me immense pleasure and pride to present my message for this edition of the AEE Pune Chapter Newsletter. At the outset, I would like to congratulate the entire team of the AEE Pune Chapter for their outstanding efforts in bringing together such an informative, insightful, and professionally enriching publication dedicated to the advancement of energy efficiency and sustainable development.

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This conference will bring together energy professionals, policymakers, industry leaders, academics, and innovators to exchange knowledge and explore practical solutions for sustainability, energy efficiency, and the global energy transition.

Cape Town is consistently ranked among the world's premier tourist destinations, renowned for its iconic Table Mountain, breathtaking coastlines, rich cultural heritage, world-class vineyards, and unique landscapes where the Atlantic and Indian Oceans meet. Attending AEE Africa offers an opportunity to combine professional development with an unforgettable travel experience.

I encourage the AEE Pune Chapter members to consider participating in this important international gathering as we continue to build stronger global partnerships and advance the impact of our profession worldwide.

To register visit - https://aeeafrica.org/

I look forward to welcoming you personally to Cape Town.

Prof. (Dr.) LJ Grobler
International Director of Membership Development
Association of Energy Engineers (AEE)

MESSAGE FROM PRESIDENT, AEE KOLKATA

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The newsletter reflects the dedication, commitment, and technical excellence of the Pune Chapter in promoting awareness about energy conservation and environmental sustainability. I am truly impressed by the wide range of articles and technical write-ups covering critical themes such as energy efficiency, decarbonization, zero-emission strategies, renewable energy integration, green technologies, and sustainable industrial practices. These contributions are not only intellectually stimulating but also highly relevant in addressing the growing global concerns regarding climate change, carbon emissions, and energy security.

In today's rapidly evolving world, where industries and organizations are under increasing pressure to optimize energy utilization while minimizing environmental impact, such knowledge-sharing initiatives play a vital role. I particularly appreciate the emphasis placed on sustainable solutions and the transition toward cleaner and greener energy systems, which align closely with national and global sustainability goals.

The remarkable efforts undertaken by the AEE Pune Chapter in organizing various seminars, workshops, technical sessions, awareness programmes, conferences, and professional networking events deserve special appreciation. These events have significantly contributed to enhancing technical competency, promoting professional collaboration, and encouraging industries, institutions, and individuals to adopt energy-efficient practices.

Through these initiatives, the Pune Chapter is also contributing meaningfully toward national missions related to energy conservation, climate action, and sustainable development.

The Association of Energy Engineers has always stood as a global platform for advancing energy engineering and management practices, and chapters like Pune continue to strengthen this vision through their dynamic activities and consistent engagement with stakeholders.

I would also like to appreciate the editorial team and contributors whose sincere efforts have made this publication both informative and impactful. The quality of content, diversity of topics, and practical orientation of the articles make this newsletter an excellent resource for professionals, students, researchers, and organizations working in the field of energy management and sustainability.

As President of the AEE Kolkata Chapter, I extend my heartfelt congratulations and best wishes to the entire AEE Pune Chapter for their commendable achievements and continuous contribution toward the promotion of energy efficiency and conservation.

Let us continue working together with dedication and shared responsibility to build a cleaner, greener, energy-efficient, and zero-emission future for the generations to come.

I wish the AEE Pune Chapter and its members continued success in all their future endeavors.

With warm regards and best wishes,

Prof. (Dr.) Krishna M. Agrawal
President, AEE Kolkata Chapter
Director, IISWBM, Kolkata

KNOWLEDGE CORNER

Modular UPS Systems with Intelligent Parallel Design: Enhancing Reliability and Energy Efficiency

In today's digital world, uninterrupted power supply is essential for data centers, hospitals, industrial facilities, and other mission-critical operations. Power disruptions can result in data loss, operational downtime, and significant financial impacts. While conventional online UPS systems have traditionally provided reliable backup power, modular UPS systems with intelligent parallel design emerge as a more flexible, resilient, and energy-efficient solution.

A modular UPS comprises multiple independent power modules operating in parallel within a common frame. Unlike traditional monolithic UPS systems, this architecture provides built-in redundancy. If one module fails, the remaining modules continue supporting the load, ensuring uninterrupted operation. Additionally, hot-swappable modules enable maintenance or replacement without shutting down the system.

The key innovation lies in intelligent parallel design. Advanced controllers continuously monitor load demand, module health, and operating conditions. During periods of lower demand, excess modules are automatically placed in standby mode, reducing energy consumption while remaining ready for instant activation. As load requirements increase, additional modules are brought online within milliseconds, ensuring seamless power delivery.

Modular UPS systems also offer excellent scalability, allowing organizations to expand capacity as power needs grow without significant upfront investment. Features such as N+X redundancy, automatic load balancing, and intelligent module rotation further enhance reliability, optimize performance, and extend equipment life.

Leading manufacturers, including Vertiv, Eaton, ABB, and Schneider Electric, have integrated intelligent paralleling technologies into their UPS portfolios. As organizations focus on reliability, energy efficiency, and sustainability, modular UPS systems with intelligent parallel design provide a future-ready approach to critical power infrastructure.

Mrudla Kelkar – CIWEEL Group Coordinator

How does the Intelligent Parallel mode work?

Efficiency optimization: During partial loading, unneeded modules are switched to a standby

Auto-Synchronization: The modules are intelligent enough to synchronize their inverters and DC bus voltages without complex external wiring

Load Balancing & Rotation: The system actively monitors runtimes and rotates standby modules, ensuring equal wear and tear on all components

Instantaneous Response: If the load increases, modules in sleep mode can wake up in under 5 milliseconds without interrupting the power flow

Example:

For a 100 kVA system; in the traditional UPS configuration one more 100 kVA module is needed to provide **N+1 redundancy**. In a modular system, if you have chosen a 20 kVA scalable modular system, all you require is a 120 kVA modular system

Such a system requires fewer running costs to operate. For example, if the site has 80 kVA load and a 100 kVA modular system is purchased, then the running costs will be less than if the site had purchased 2 × 80 kVA standalone parallel systems.

A data centre has 4 UPS modules rated at 500 kW, N+1 redundancy. Total IT load is 600 kW. In the traditional system all four UPS will run each at a load of 150 kW (30% load). The UPS efficiency drops to 93% at 30% load.

If Intelligent parallel system is used only two modules will run at 300 kW/UPS with 60% load, two modules will be on stand-by. UPS efficiency increases to 97% at 60% load.

Input power in case 1: 600/0.93 = 645 kW,
losses =45 kW

Input power in case 2: 600/0.97 = 619 kW,
losses 19 kW Savings = 26 kW

Energy savings= 26 X 8760 hours = 2,27,760 kWh/year, Unit rate: INR 10 per kWh

Monetary savings = 22,77,600/- per year

Energy, Environment and Waste Management– Part 1



Can you see this mountain? No, this is not a trekking destination or a scenic hill range. This mountain stands right in our own city of Pune — a mountain of waste. And Pune is not alone. Every small and large city today has such mountains. These garbage hills symbolize one of the biggest urban challenges of our time: solid waste management.

As we celebrate Environment Day, it is important to reflect on the relationship between solid waste and the environment.

Waste is generated every single day in every household. Garbage collection workers and municipal vehicles gather this waste and transport it through the city. But where does it finally go? Most of it ends up dumped on these massive garbage hills. Truck after truck climbs these dumping grounds every day, continuously adding to their height. Thus, a small problem created in each household gradually turns into a gigantic city-wide environmental challenge.

Eventually, nature takes control. The waste begins to decompose, and during this process several harmful effects emerge. Foul odor spreads across nearby areas. Flies, insects, and pests multiply rapidly. Toxic liquid known as leachate is generated and slowly contaminates groundwater. The decomposition process also releases gases such as methane, which is one of the major contributors to climate change and global warming.

At the same time, materials like plastic, paper, cardboard, footwear, bags, and other non-biodegradable items continue accumulating for years, making these garbage mountains even larger. Day after day, the pollution problem keeps growing — just like the height of these waste hills.

Another major reason behind environmental degradation and climate change is our dependence on conventional sources of energy. Fuels such as petrol, diesel, coal, and natural gas create large-scale pollution when burned. Along with environmental damage, rising fuel prices, import dependency, transportation costs, and distribution expenses place a heavy economic burden on both the country and the common citizen.

Now the question arises — how is the fuel problem connected to waste management?

Interestingly, the answers to both problems are hidden within each other. In fact, a single sustainable solution can address both environmental pollution and energy scarcity. The missing link is the proper use of technology.

At present, we are only discussing urban solid waste management. The challenges related to rural waste management, pollution caused by agricultural and organic waste, energy generation from biomass, and rural employment opportunities are even larger subjects waiting to be explored.



By scientifically managing our own waste and converting it into renewable energy, we can reduce environmental damage, create cleaner cities and villages, empower farmers and common citizens, and strengthen the nation's economy.

How can this be achieved?

That is exactly what I will be discussing in this article series.

On the occasion of Environment Day, I am beginning this journey of awareness through a series of small yet informative articles. Keep reading, sharing, and spreading awareness.

Amol Chiplunkar, Editor – The Energy Pulse
Director – AAC Energy Consultants

EVENT REPORT: ISO 14064 Lead Verifier Course

AEE Pune Chapter Conducts ISO 14064 Lead Verifier Training Program

As part of its continued commitment to professional development and capacity building, AEE Pune Chapter successfully conducted an ISO 14064 Lead Verifier Training Program for its members during May 2026. The program focused on Greenhouse Gas (GHG) Accounting, Reporting, Validation, and Verification in accordance with the ISO 14064 series of standards.

The comprehensive 40-hour online course was attended by 11 chapter members and was designed to equip participants with the knowledge and practical skills required to effectively manage and verify GHG inventories and climate-related projects. The training covered all three parts of the ISO 14064 series—ISO 14064-1, ISO 14064-2, and ISO 14064-3—providing participants with a holistic understanding of greenhouse gas quantification, reporting, validation, and verification processes.

The course was delivered by renowned trainer Mr. Jayant Shiradkar, whose engaging and practical approach made a technically complex subject easy to understand and apply. Through a combination of presentations, case studies, group exercises, workshops, and interactive discussions, participants gained valuable insights into the implementation and verification of GHG management systems.

AEE Pune Chapter extends its sincere appreciation to Intertek for partnering in this initiative and helping make this valuable learning opportunity available to chapter members.

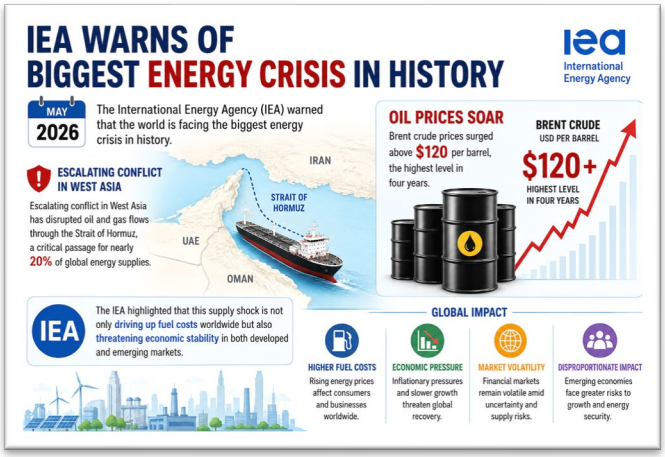
The successful completion of the program by all participants reflects the chapter's ongoing efforts to develop competent professionals who can contribute effectively to sustainability, decarbonization, and climate action initiatives across industries.

Vinay Gadikar, Participant of Certification Program

ENERGY NEWS

Global Energy Crisis Warning by IEA

In May 2026, the International Energy Agency (IEA) warned that the world is facing the biggest energy crisis in history. The statement came after escalating conflict in West Asia disrupted oil and gas flows through the Strait of Hormuz, a critical passage for nearly 20% of global energy supplies. As a result, Brent crude prices surged above $120 per barrel, the highest level in four years. The IEA highlighted that this supply shock is not only driving up fuel costs worldwide but also threatening economic stability in both developed and emerging markets.



Primary assessment after PM Modi's appeal to reduce the fuel consumption

In May 2026, fuel prices in India rose by about 7–8% compared to April, with petrol increasing by ₹7.35 per litre (≈7.7%) and diesel by ₹7.53 per litre (≈8.6%) in Delhi.

After Prime Minister Modi's appeal in May 2026 urging citizens to reduce fuel consumption, early reports showed only a modest decline in demand. Oil marketing companies noted that while some urban consumers cut back on discretionary travel, overall fuel sales remained strong because transport, agriculture, and industry rely heavily on diesel and petrol.

In short, the appeal did raise awareness and encourage conservation, but the reduction in fuel consumption was limited and not enough to offset the broader rise in demand pressures.

Vinay Mulay, Secretary AEE Pune Chapter

ABOUT AEE

The AEE Pune Chapter represents Association of Energy Engineers (AEE)—a global energy-oriented organization based in Atlanta, USA, with over 120 chapters and more than 17,000 certified energy professionals.

The chapter is dedicated to:

- Raising awareness about energy efficiency and sustainability
- Building professional capacity via workshops, seminars, and certifications
- Supporting organizations in reducing energy costs
- A key focus is also contributing toward Net-Zero goals.

Certification Benefits & Professional Growth

- Promotion of globally recognized AEE certifications that enhance career advancement and professional credibility in energy management and auditing.
- AEE certifications such as CEM and CMVP enhance professional credibility across industries and geographies.
- Certification supports progression into senior roles in energy management, sustainability, and ESG.
- You can join an international community of energy professionals for collaboration, mentorship, and career opportunities.

You can gain the expertise to deliver Net-Zero and ESG-aligned projects and play a pivotal role in the green economy.

MEMBERSHIP APPEAL

Are you passionate about energy efficiency, sustainability, and innovation? Whether you're an energy professional, an academician shaping future talent, or a student aspiring to lead in the green economy, AEE offers you:

Global Recognition – Access internationally acclaimed certifications like CEM, CMVP

Professional Growth – Enhance your skills and open doors to leadership roles

Networking – Connect with industry leaders, researchers, and peers worldwide

Knowledge Sharing – Attend seminars, webinars, and technical sessions

Impact – Contribute to India's Net-Zero and sustainability goals

Be part of a global energy movement. Shape the future of sustainable earth.

MEMBERSHIP

When you join AEE you gain access to a wide variety of member benefits while participating in an organization that enables your growth and recognizes outstanding professional achievement.

AEE Certifications are globally reputed and facilitate the growth in professional life.

AEE platform hosts enriching events and content like webinars, trainings, publications for members' capacity building

AEE members are opportune to connect with industry peers, experts and leaders.

Step 1 - To be member of Association of Energy Engineers go to the link: https://aeepune.org/index.php/membership.

Step 2 – To join AEE Pune Chapter fill in the Membership Interest Form - https://forms.gle/rZGyNirNNqwTCkxV8

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Net Zero Conference 2026

Sustainability – Collaboration – Sharing – Showcasing

Stay tuned to be part of grand annual event organized by AEE Chapters

Upgrade yourself with exposure to recent developments in the **Sustainability** domain

Collaborate with fellows from different parts of the globe

Share your success stories – help others to succeed

Showcase your capabilities on the global stage

Get the most by choosing to be part of the Organizing Committee.