Association of Energy Engineers

THE ENERGY PULSE

KNOWLEDGE • INNOVATION • SUSTAINABILITY

aee pune chapter

July-August 2026

MESSAGE FROM CHAPTER PRESIDENT



Dear Members,

Welcome to the latest edition of our AEE Chapter newsletter! We are thrilled to bring you key industry updates, chapter developments, and valuable technical insights.

First, we have an exciting announcement to share: **The AEE Pune Chapter Newsletter, *'The Energy Pulse,'* has been recognized as the Best Newsletter by the Association of Energy Engineers!** This prestigious award will be presented at AEE World in Orlando, FL (USA) this September. This achievement belongs to our dedicated editorial team, insightful content contributors, and every AEE member whose encouragement keeps us going.

In this issue:

- **Leadership Insights:** Featuring exclusive messages from **Jose Samuel Monterroso (Regional VP, Latin America)** and **Vishve Bandhu Mahendra (Regional VP, Asia Subcontinent)**.
- **Knowledge Corner:** Explore how the ESCO model drives chiller system replacements and upgrades—achieving significant energy savings and emission reductions with **zero upfront CAPEX** for end-users.
- **Sustainability Spotlight:** Our *Energy, Environment and Waste Management* section dives into the mechanics of waste generation.
- **Energy News:** Stay informed on power distribution reforms, renewable energy trends, and a reality check on the ethanol landscape.

Thank you for being a part of our growing community. Enjoy the read!

Vinay Gadikar,
President AEE Pune Chapter

MESSAGE FROM RVP, AEE LATIN AMERICA



Dear friends, family, and colleagues at AEE and members of the AEE Pune Chapter: Greetings from Guatemala.

Its high-quality content, technical level, and professional development and training demonstrate a high level of commitment to promoting Energy Management, Energy Efficiency, and Sustainability, aligned with AEE's mission and vision.

As Regional VP for Latin America of the AEE, I would like to invite you to continue promoting the AEE, fostering best practices in energy efficiency, and, if possible, holding joint events so that we can support energy consumers in Latin America in reducing their energy consumption with clean, efficient, and high-quality technologies from India.

José Samuel Monterroso,
Regional Vice President Latin America AEE

MESSAGE FROM RVP, AEE ASIA SUBCONTINENT



Dear Fellow Energy Engineers, professionals and flag bearers of the movement.

I would like to congratulate the chapter and its leaders for taking this initiative.

We all are doing great jobs, but creating awareness is paramount.

It's always a big effort to get suitable articles and then, compiling it for the betterment of all the Citizens of the Planet.

May this Newsletter bring enlightment to deserving minds.

I sincerely wish the Team and all the members all the very best, and hope that they will continue such great efforts all along.

Vishve Bandhu Mahendra
Regional Vice President Asia-Sub Continent AEE

Zero-Capex Chiller Modernization Delivers 48% Energy Savings for a Hyderabad Hotel

An IoT-enabled energy assessment and ESCO financing model helped a 20-year-old hotel reduce annual cooling energy consumption by 319,000 kWh while eliminating upfront capital investment.

Executive Summary:

HVAC systems typically account for 40–60% of total electricity consumption in commercial buildings, making chiller plant optimization one of the highest-impact energy conservation measures. However, many facilities continue operating aging equipment because capital investment is often difficult to justify.

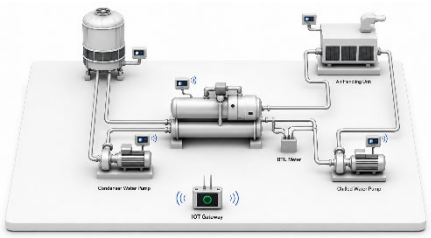
This case study highlights how a 20-year-old hotel in Secunderabad modernized its chilled water plant through an IoT-driven energy assessment and a Shared Savings ESCO model, eliminating the need for upfront capital while significantly improving system performance.

Key Stats

- Annual Monetary Savings- ₹33 Lakh
- Annual Energy Savings- 3,18,967 kWh
- CO_2 Emission Reduction- 274 Tonnes
- Specific Energy Consumption Improved by- 48%

Customer Overview

Location: Secunderabad, Telangana



Facility Type: Commercial Hotel

Existing Cooling Infrastructure

- 225 TR Water-cooled Chiller
- 130 TR Water-cooled Chiller
- Three Primary Pumps
- Three Condenser Pumps
- Three Cooling Towers

The hotel operated continuously throughout the year, making HVAC the largest consumer of electricity within the facility.

The Challenge

Rising Costs, No Budget for Upgrades

- Inefficient Energy Usage – The system consumed 6,53,747 kWh annually, with an inefficiency of 1.58 kW/TR.
- Aging Equipment – One chiller was non-functional, making the hotel vulnerable to breakdowns.
- Constant Maintenance Hassles – The pumps ran at fixed speeds, leading to wasted energy and higher wear and tear.
- Zero Budget for New Systems – The hotel needed an energy solution without major capital investment.

The Solution

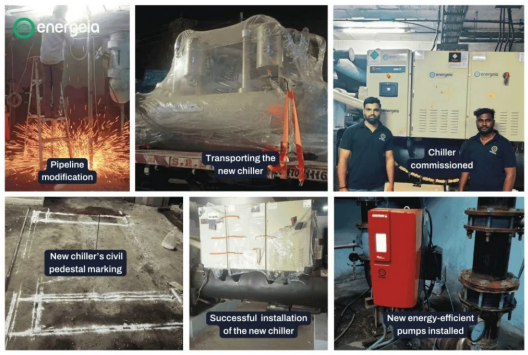
Energeia's E-Chill Zero-Capex Financing Model

To address these challenges, Energeia carried out a comprehensive a real-time IoT-based chiller audit using our energy monitoring system (EMS). Our BEE-certified energy managers looked through the data to baseline energy consumption, cooling demand, and efficiency losses.

We proposed a modernization solution under its E-Chill Shared Savings ESCO Model, enabling the hotel to upgrade its cooling plant with zero upfront capital investment.

The solution included replacing the aging chiller with a high-efficiency VFD-equipped water-cooled chiller, upgrading pumps and cooling towers, installing an automatic tube cleaning system, and deploying continuous IoT-based performance monitoring to sustain long-term efficiency.

Step 1: High-Efficiency Chiller Replacement



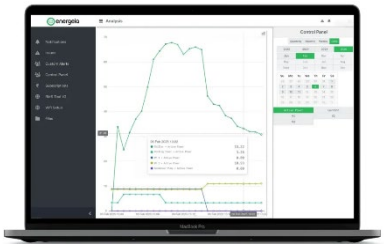
Step 2: Smart Pump & Cooling Tower Optimization



- We upgraded pumps with VFDs to dynamically adjust to cooling demand.
- We installed an automatic tube cleaning system to maintain long-term efficiency.

- We replaced the old cooling towers with new energy-efficient, low-approach cooling towers to improve overall system performance.

Step 3: IoT-Based Performance Monitoring & Maintenance



- We installed real-time sensors, flow meters, and energy tracking to make sure the cooling systems performed at peak efficiency every minute of the day.
- We guaranteed the chiller's performance for 6 years, absorbing all operational risks.

Summary

The upgraded HVAC plant improved efficiency from 1.58 kW/TR to 0.81 kW/TR, reducing annual energy consumption by 48%, equivalent to approximately 319,000 kWh and ₹33 lakh annual savings, while guaranteeing reliable cooling and long-term operational performance

Performance Metric	Before (Existing System)	After (Upgraded System)	Business Impact
HVAC Plant Efficiency	1.58 kW/TR	0.81 kW/TR	48% Improvement
Annual Energy Consumption	653,747 kWh	334,780 kWh	319,000 kWh Saved (48% Reduction)
Annual Energy Cost	—	—	₹33 lakh Annual Savings

48% lower energy consumption | 319,000 kWh saved annually | ₹33 lakh annual savings | HVAC plant efficiency improved from 1.58 to 0.81 kW/TR

The ESCO Advantage- Zero Capex, Zero Worries

- **No Capital Expenditure** – Energeia financed, installed, and maintained the new chiller.
- **Risk-Free Performance Guarantee** – Energeia bought the new chiller and absorbed all financial risks.
- **No Downtime** – A backup chiller ensured uninterrupted cooling during installation and maintenance.

Rahul Chougule
Senior Energy Analysts
Energeia Microgrid Private Limited

ENERGY NEWS

❖ Distribution Reforms Target Better Efficiency

The Draft National Electricity Policy 2026 places electricity distribution reforms at the forefront of the power sector's transformation. Distribution companies (DISCOMs) have long struggled with high Aggregate Technical & Commercial (AT&C) losses and financial stress. The draft policy emphasizes reducing AT&C losses to single-digit levels through widespread deployment of prepaid smart meters, improved energy accounting, digital monitoring, and stronger governance practices. These measures are expected to enhance operational efficiency, improve billing and collection, and ensure financially sustainable distribution utilities capable of delivering reliable electricity to consumers.

❖ E20 Fuel: Field Evidence and Efficiency Trade-off

E20 (20% ethanol-blended petrol) across the automotive sector. Field studies conducted by automobile manufacturers and the Ministry of Petroleum indicate that E20 fuel has not resulted in significant fuel-line corrosion or major engine damage in existing vehicles. Although users may experience a modest reduction in fuel economy of around **3–5%**, the higher-octane rating of ethanol improves engine performance while significantly lowering dependence on imported crude oil. More importantly, E20 can reduce lifecycle carbon emissions by **up to 40%**, making it an important step towards cleaner transportation and India's energy security goals.

❖ Rooftop Solar Reaches More Homes

India is also witnessing remarkable progress in distributed renewable energy through the **PM Surya Ghar: Muft Bijli Yojana**. The flagship programme has enabled nearly **19 lakh households** to install rooftop solar systems, with many beneficiaries now reporting **zero monthly electricity bills**. Besides reducing household electricity expenses, the scheme is strengthening decentralized clean energy generation, lowering peak demand on the grid, and encouraging greater public participation in India's renewable energy transition.

Vinay Mulay
Secretary, AEE Pune Chapter

ENERGY, ENVIRONMENT AND WASTE MANAGEMENT: PART 2

What is waste?

Waste is generally defined as any material or object that is no longer useful to us. But interestingly, in the cycle of nature, the very concept of "waste" does not truly exist.

Trees and plants absorb nutrients from the soil, sunlight from the sun, and carbon dioxide from the atmosphere to produce trunks, leaves, flowers, and fruits. Animals and birds consume leaves, fruits, insects, or other living beings to obtain energy. Their excreta and dead bodies decompose naturally and merge back into the soil and atmosphere.

The microorganisms derive energy during this decomposition process. The decomposed elements again turn to nutrients for plants and trees. Thus, in nature, the flow of energy and the five natural elements continues endlessly in a balanced cycle. None of these elements remain permanently in one form.

Then where does waste come from in nature?

Now you may ask — if nature itself does not create waste, then where did these mountains of garbage come from?

Ironically, this mountain-sized problem has been created by nature's most intelligent creation — human beings.



To make life easier and more comfortable, humans moved away from natural systems and created countless inventions. Using the resources of nature, we developed machines, chemicals, industries, and durable materials. We made everything stronger, longer lasting, and more convenient.

From needles to giant machines, from bicycles to airplanes, from clothes to buildings, from shoes and bags to televisions, refrigerators, and household appliances modern civilization transformed almost every aspect of life. In many ways, we unknowingly shifted from natural living to artificial living.

Today, sometimes it becomes difficult to understand whether these comforts exist for us, or whether we exist only to maintain them. Now think about this carefully: when these highly durable



products become unwanted and are thrown away, how can they decompose naturally and easily?

As a result, the by-products of our artificial lifestyle accumulate as waste. Small household garbage bins gradually transform into enormous mountains of waste spreading both vertically and horizontally. What once looked like a simple waste-bin problem slowly becomes a waste-management crisis.

So what is the solution?

Do we need to completely change our lifestyle? Should we abandon technology and destroy all modern inventions? Should humanity return to forests and mountains to live primitive lives again?

Certainly not.

Human beings are intelligent and creative. The same species that has built entire civilizations, industries, and technological systems is also capable of solving this problem.

The need of the hour is awareness.

We must remember that humans are not separate from nature; we are only a small part of it. Therefore, the solutions we create must work in harmony with nature rather than against it.

For the future of humanity, society must come together and transform this growing waste crisis into a sustainable resource-management system.

In the first part of this article series, we discussed mountain garbage, conventional energy, and environmental pollution. In the next part, we will explore the principles of "Reduce, Reuse, Recycle" and the science of waste decomposition.

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

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, training, and 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

Upcoming International AEE Conferences 2026

AEE World – Sep 2026 at Orlando, FL, USA

AEE Africa – Oct 2026 at Cape Town, South Africa



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