



GL BAJAJ
Institute of Management & Research
Greater Noida



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Genesis

POWERING THE FUTURE

Energy Security, Climate Resilience & the Global Clean Energy Transition

(Bi-annual Newsletter of Centre for Sustainability - A Member of PRME)



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Committee Members

Dr. Shuchita Singh, Professor, GLBIMR
Dr. Sunita Chowdhury, Associate Professor, GLBIMR
Dr. Nidhi Srivastava, Professor, GLBIMR

Student Coordinators

Ms. Tanya Indoria



From the desk of
Director GLBIMR
Dr. Sapna Rakesh

Dear Avid Readers,

Energy has always been the foundation of human progress. It powers our homes, industries, healthcare systems, educational institutions, and economies. However, as the world faces unprecedented challenges arising from climate change, resource constraints, and growing energy demands, the need for sustainable and inclusive energy solutions has become more urgent than ever before.

The theme of this edition, “**SDG 7: Affordable and Clean Energy**”, highlights one of the most critical priorities of our time. Ensuring access to reliable, sustainable, and modern energy is not merely an environmental objective; it is a catalyst for economic growth, social development, innovation, and improved quality of life. The transition towards clean energy is no longer a choice—it is a necessity for building resilient communities and securing a sustainable future for generations to come.

At GLBIMR, we believe that future leaders must be equipped not only with managerial and technological competencies but also with a deep understanding of sustainability challenges and opportunities. As management professionals, students have a significant role to play in driving responsible business practices, promoting innovation, and contributing to solutions that balance economic progress with environmental stewardship.

This edition of Genesis brings together industry perspectives, thought-provoking discussions, emerging trends, and innovative ideas that explore the evolving energy landscape. Through these contributions, we aim to encourage meaningful dialogue and inspire our students to think critically about the role they can play in shaping a cleaner, more equitable, and energy-secure world.

I extend my appreciation to the Sustainability Cell, faculty members, students, and contributors whose efforts have made this edition possible. I hope this issue serves as a source of knowledge, inspiration, and motivation for all our readers.

Let us work collectively towards a future where sustainable energy is accessible to all and where progress is powered by responsibility, innovation, and purpose.

All the Best!

India's Power Sector From Colonial Darkness to Viksit Bharat 2047

A 77-Year Journey of Resilience, Reform and Renewable Revolution

Setting the Stage: Independence to Illumination

When India raised its tricolour on 15 August 1947, the nation inherited a power sector that was fragile and deeply inadequate. The total installed electricity generation capacity stood at a mere 1,362 MW — a figure wholly insufficient for a newly independent country of 350 million people. Electricity was largely confined to a handful of urban centres, while the vast rural hinterland lived without a single electric light. Chronic underinvestment under colonial rule had left India with crumbling infrastructure, outdated equipment, and no coherent national energy policy. The challenge before independent India was, in every sense of the word, monumental.

Over the next seven and a half decades, India scripted one of the most remarkable energy transformations in modern history. From those humble 1,362 MW, the country has grown its installed power capacity to over 542 GW (AS ON MAY 2026), making India the world's third-largest electricity producer. This extraordinary journey — spanning Five-Year Plans, economic liberalisation, sector reforms, and a green energy revolution — is a testament to the nation's institutional resolve, engineering capability, and democratic spirit.

Seven Decades of Achievement: A Story Worth Telling

The first two decades after independence were defined by state-led institution building. The Government of India established

State Electricity Boards (SEBs) in every state, created the Central Electricity Authority (CEA) as the apex technical body, and drew up ambitious plans for large hydroelectric projects. Iconic dams such as Bhakra Nangal in Punjab, Hirakud in Odisha, and Nagarjunasagar in Andhra Pradesh were commissioned, generating both electricity and irrigation water. These projects became symbols of modern India and laid the physical foundation of the national grid. By the end of the 1960s, installed capacity had crossed 5,000 MW — nearly four times the 1947 figure.

The 1970s brought a sharper focus on thermal power. The National Thermal Power Corporation (NTPC) was founded in 1975 and rapidly became the backbone of India's electricity supply. In parallel, the Rural Electrification Corporation (REC) was set up to channel funds specifically toward taking electricity to villages. By the mid-1980s, installed capacity had crossed 30,000 MW, though demand was already outpacing supply and the seeds of chronic power shortages were being sown.

The economic liberalisation of 1991 opened the power sector to private investment for the first time. Independent Power Producers (IPPs) entered the Power sector, which required lots of update in rule, regulation, policy etc. The truly transformative moment came with the Electricity Act of 2003 — a landmark legislation that unbundled generation, transmission, and distribution; established independent electricity regulatory commissions at



Mr. Sitesh Barche

EA to Chairman /
Deputy General
Manager, NTPC

the centre and state levels; and introduced open access and competition into the sector. This single Act reshaped India's power landscape more than any policy before or since.

Between 2005 and 2014, India pursued an aggressive capacity addition agenda through Ultra Mega Power Projects (UMPPs) — each of 4,000 MW or above. The Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) pushed electricity lines to tens of thousands of un-electrified villages. The installed capacity crossed 250,000 MW, though distribution companies (DISCOMs) remained financially stressed, struggling with high aggregate technical and commercial (AT&C) losses and below-cost tariffs.

The period from 2015 to the present has been the most transformative in independent India's energy history. The UDAY (Ujwal DISCOM Assurance Yojana) scheme of 2015 restructured over Rs 2.3 lakh crore of DISCOM debt and forced operational improvements. More dramatically, the SAUBHAGYA scheme (2017–2019) connected over 2.86 crore un-electrified households to the

grid, achieving 100 per cent household electrification for the first time in India's history — a feat that had taken decades to accomplish even in far smaller economies. India also created the world's largest synchronised power grid, integrating regional networks into one seamless national grid spanning over 1.4 million circuit kilometres of transmission lines. Today, India's renewable energy capacity —

spanning solar, wind, hydropower, and bio-power — has crossed 250 GW, with solar alone accounting for more than 150 GW, making India ranks third globally in Renewable Energy Installed Capacity,

India, SDG-7, and the Paris Pledge: Leading from the Front

The United Nations' Sustainable Development Goal 7 (SDG-7) seeks affordable, reliable, sustainable, and modern energy for all by 2030. India has made strong progress across SDG-7 indicators. Universal household electrification has largely resolved energy access, renewable energy's share in installed capacity has risen from under five per cent in 2010 to over 44 per cent by 2025, and efficiency programmes like UJALA have distributed over 36 crore LED bulbs, saving an estimated 46 billion units annually.

Under the Paris Agreement, India pledged that 40 per cent of installed electricity capacity would come from non-fossil sources by 2030. It achieved this in 2021, nine years early. In 2022, India raised its ambition to 500 GW of non-fossil capacity by 2030, a 45 per cent cut in GDP emission intensity from 2005 levels, and net-zero emissions by 2070. Current analyses indicate India is on track to achieve all NDC target on time.

NDC 3:0

India has committed to reduce the emissions intensity of its GDP by 47 per cent by 2035 from 2005 levels, achieve 60 per cent cumulative

installed electric power capacity from non-fossil fuel-based sources by 2035, and create an additional carbon sink of 3.5–4.0 billion tonnes of CO₂ equivalent through forest and tree cover by 2035. These commitments align with the vision of Viksit Bharat @2047 and India's net-zero target for 2070.

Viksit Bharat 2047: The Energy Architecture of a Developed India

Viksit Bharat — Developed India — is Prime Minister Narendra Modi's centenary vision for the country at 100 years of independence. It envisages India as a USD 30 trillion economy, free from poverty, and equipped with world-class infrastructure in every sector. At the heart of this vision sits a transformed energy system that provides every citizen and every industry with affordable, clean, and 24x7 reliable electricity.

By 2030, 500 GW of renewable energy capacity from solar, wind, small hydro, and biomass. Green hydrogen — produced by using renewable electricity to split water — is targeted at 5 million metric tonnes per annum, positioning India as a global export hub for this fuel of the future. The National Smart Grid Mission 2.0 will deploy artificial-intelligence-driven demand response systems across 500 cities, balancing load and generation in real time. The electric vehicle ecosystem is set to scale to 100 million EVs supported by 2 million public charging stations. The power sector roadmap for 2047, installed capacity will in range of 2500–2800 GW (100 GW nuclear), total electricity consumption in range of 6400–6800 TWh, per capacity electricity around 4500 Kwh, grid emission factor around 0.35 (kgco₂/kwh)—a benchmark consistent with upper-middle-income economies and a precondition for the quality of life that Viksit Bharat promises.

Career Opportunities: Powering Your Future in India's Energy Sector

India's energy transition is opening up exceptional opportunities across functions. For management students, the power sector is no longer a conventional public-sector space; it has become one of the country's fastest-growing and most rewarding career destinations.

With billions flowing into renewables through private equity, green bonds, and infrastructure finance, demand is rising for talent in project finance, energy trading, infrastructure investment banking, and ESG and sustainability management. Candidates who understand tariff structures, power purchase agreements, regulatory risk, and carbon markets command a distinct premium.

Government and private utilities, hire management graduates for business development, project planning, regulatory affairs, and HR. Senior roles such as Head of Renewable Development, Regulatory Affairs Manager, Chief Sustainability Officer, and Energy Policy Consultant are gaining prominence.

The most promising new roles in India's energy sector sit at the intersection of energy and technology. As the country builds smart grids, expands battery storage, and advances green hydrogen, demand will rise for professionals who combine management skills with expertise in AI and data analytics, carbon markets, EV infrastructure, and microgrid design. Certifications such as Certified Energy Auditor, PMP, and CFA with an energy finance focus can strengthen career prospects. The power sector of 2047 will be shaped not only by engineers, but also by managers, financiers, policy experts, and technology strategists who see energy as the foundation of human progress.

The views are personal in nature.

Featured Article -

Advancing SDG 7: HR Strategies for Affordable and Clean Energy in India

As the world accelerates its transition towards sustainable energy systems, the role of human capital in driving this transformation has become increasingly important. In this featured article, Mr. Keshri Nandan Singh shares his perspectives on how strategic human resource practices, ESG-driven leadership, and workforce development can contribute to achieving Sustainable Development Goal 7 — Affordable and Clean Energy for All. Drawing upon his experience in India's renewable energy sector, he explores the opportunities, challenges, and people-centric strategies shaping the future of clean energy.

Mr. Keshri Nandan Singh

Senior Executive –
Human Resources,
Oriana Power Limited



Mr. Keshri Nandan Singh is a Human Resources professional with over three years of experience in India's renewable energy sector. Currently serving as Senior Executive – Human Resources at Oriana Power Limited, he plays a key role in aligning talent strategy with business objectives across emerging clean energy domains, including Solar Energy, Wind Energy, Battery Energy Storage Systems (BESS), Green Hydrogen, and Green Ammonia. With expertise in AI-enabled recruitment, workforce planning, employer branding, and talent development, he has contributed to building future-ready organizations that support India's clean energy transition. Having previously worked with GoodEnough Energy, he has also been associated with organizational scaling initiatives and energy storage projects. Passionate about sustainability and people-centric leadership, Mr. Singh strongly advocates the role of Human Resources as a strategic driver of ESG goals, organizational growth, and long-term sustainable development. Through his work, he continues to contribute towards creating a skilled workforce capable of accelerating India's journey towards a cleaner, more resilient energy future.

With over three years as an HR professional in India's renewable energy sector, I have witnessed firsthand how human capital accelerates the transition to sustainable power. This article explores SDG 7, ensuring access to affordable, reliable, sustainable, and modern energy for all, focusing on actionable HR strategies. Amid global net-zero goals, India's renewable surge offers lessons for leaders aiming to integrate ESG into business.

India's progress is remarkable: renewable capacity exceeds 457 GW as of 2026 (MNRE), up from 76 GW in 2014. Solar tariffs dip below ₹2.50/kWh, undercutting coal, while initiatives like the National Solar Mission and PM-KUSUM electrify rural areas. Yet coal's 70% dominance and energy poverty demand accelerated action to reach 500 GW of non-fossil capacity by 2030.

Core Pillars of SDG 7 and Opportunities

SDG 7 emphasizes three pillars:

- **Affordable Access:** Universal electrification via micro-grids and solar pumps.
- **Clean Energy Share:** Hybrids (solar-wind-storage) for 24/7 supply.
- **Efficiency:** AI-driven maintenance cuts losses 30%.

The sector's 1 million green jobs signal potential, with a target of 50 million by 2030 (NITI Aayog). HR must lead this scale-up.

HR's Pivotal Role in Energy Transition

Effective HR turns policy into performance, building resilient green teams.

- **Strategic Recruitment:** Prioritize ESG-savvy talent from engineering and management pools. Target 40% women in technical roles to advance equity.

- **Upskilling Initiatives:** Deliver certifications in PV tech, batteries, and grid integration. Annual programs boost efficiency 15% and retention.
- **Inclusive Culture:** Implement field-worker protections (e.g., heat-stress protocols) and sustainability-linked incentives, slashing turnover 20%.

This fosters innovation while addressing challenges such as supply chain risks and land acquisition.

ESG Frameworks for Sustainable Leadership

Renewables thrive on robust ESG integration:

Environmental

- Zero-waste operations; lifecycle analysis
- Reduced emissions; regulatory compliance

Social

- Local hiring quotas; youth training for 10,000+
- Community trust; diverse innovation

Governance

- KPI transparency; ethics training
- Risk mitigation; investor appeal

Government PLI schemes have unlocked ₹24,000 crore, but \$500 billion annual financing requires agile governance.

Innovations like community-owned micro-grids exemplify scalable models that blend profitability with equity.

Challenges and Pathways Forward

Hurdles persist in grid bottlenecks, China's module dominance, and skill gaps. Solutions demand cross-sector collaboration across industry, policy, and academia. Leaders must provoke thoughts on how to finance net-zero by 2070. Embed AI for predictive grids? HR answers by cultivating adaptive talent.

India ranks third globally in renewables, with 300% per capita solar growth. Bold HR strategies will secure this lead.

Leadership Imperative

SDG 7 is not technical alone; it's a people-powered revolution. HR professionals must champion ESG to create jobs, cut costs, and safeguard the planet. Future managers: Build teams that deliver clean energy today for a thriving tomorrow.

The views are personal in nature.



Interview Series - Power Management, Sustainability, and Energy Sector

On behalf of GL Bajaj Institute of Management and Research, we had the privilege of hosting an interview with – **Mr. Sanket Srivastava, Head (Power Management, Sustainability & Policy) at Noida Power Company Limited.** This interview discusses key challenges and opportunities in India's power sector, including reliability, affordability, renewable energy integration, AI adoption, future energy markets, and career guidance for management students.

Question 1:

What are the top priorities for India's power sector over the next decade?

The two primary priorities are ensuring reliable power supply and maintaining affordability. Utilities must deliver high-quality, uninterrupted electricity while controlling rising costs and optimizing operations for consumers.

Question 2:

What major structural changes are taking place in the power distribution ecosystem?

A significant shift is the rise of 'prosumers'—consumers who can also generate electricity through technologies such as rooftop solar systems. This creates a two-way flow of electricity and requires new systems for grid management, energy trading, and peer-to-peer transactions.

Question 3:

What operational and policy challenges do power distribution companies face today?

Distribution companies must balance affordable electricity for domestic consumers with competitive tariffs for industrial and commercial users. Achieving this balance is critical for economic growth and industrial competitiveness.

Question 4:

What challenges do utilities face

while integrating renewable energy into the grid?

The intermittent nature of solar and wind power creates grid management challenges. Utilities require battery energy storage systems, pumped storage projects, and advanced grid technologies to maintain stability, frequency control, and reliable power supply.

Question 5:

How are AI and digital technologies transforming power management?

AI is becoming a major enabler in load forecasting, scheduling optimization, predictive maintenance, and fault detection. It is expected to become a backbone technology for future power grids.

Question 6:

What skills should management students develop for careers in energy and sustainability?

Students should build strong fundamentals, focus on real-world application of concepts, strengthen data analysis skills, understand energy markets, and learn to use AI effectively as a productivity and decision-support tool.

Question 7:

What is your motivation mantra for long-term career success?

Enjoy your work, continuously learn new concepts, take on challenging projects, and remain relevant by



Mr. Sanket Srivastava

Head - Power Management, Sustainability & Policy at Noida Power Company Limited.

developing skills beyond your core responsibilities.

Question 8:

What advice would you give to students?

Read extensively, stay informed about current affairs, analyze real-world developments, and cultivate a habit of continuous learning. Reading editorials and significant court judgments can broaden analytical and strategic thinking.

- The above views are personal in nature.

Sustainability in Action

ESG Conclave 2026 & Key Initiatives

Throughout the academic year, the institute organized a series of initiatives, discussions, competitions, and industry engagements focused on Sustainable Development Goal 7 – Affordable and Clean Energy. These activities enabled students to explore the challenges of energy access, sustainability, climate resilience, and clean-energy innovation while connecting academic learning with real-world impact.

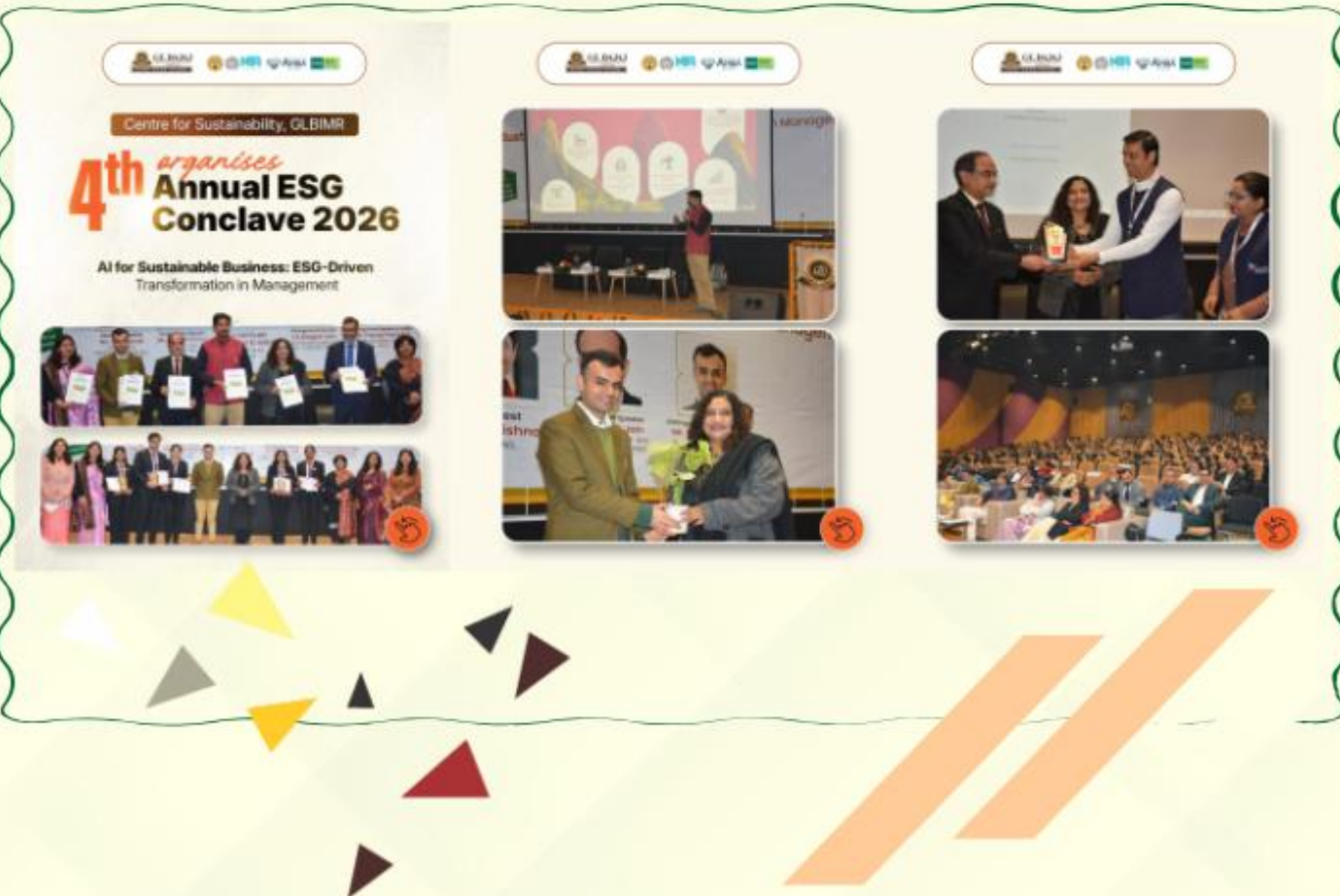
I - GLBIMR Hosts 4th Annual ESG Conclave 2026 on 10th January 2026

GL Bajaj Institute of Management and Research (GLBIMR) successfully hosted its 4th Annual ESG Conclave 2026 on the theme “AI for Sustainable Business: ESG-Driven Transformation in Management.” The event brought together industry leaders, academicians, social sector representatives, and students to deliberate on the transformative role of Artificial Intelligence (AI) in advancing Environmental, Social, and Governance (ESG) goals. The

conclave served as a platform for meaningful discussions on sustainable business practices, responsible leadership, and the integration of technology with ethical management.

The conclave featured insightful addresses by eminent speakers Mr. Ved Krishna (Pakka), Mr. Nishant Sinha (Times Internet), and C.S. Deepak Jain (Vijayash Foundation), who shared valuable perspectives on leveraging AI to drive sustainable growth and create long-term organizational value. Addressing the gathering, Ms. Sapna Rakesh,

Director, GLBIMR, reaffirmed the institute's commitment to nurturing future-ready leaders equipped to balance innovation, sustainability, and social responsibility. A major highlight of the event was the felicitation of 20 NGOs for their contributions to social development and community welfare. Bank of Baroda also recognized and honored student achievers for their outstanding accomplishments. The conclave further showcased student talent through research poster presentations focused on ESG and sustainable business solutions.

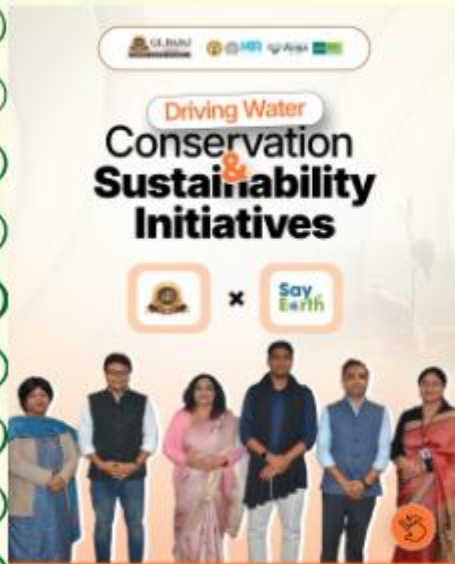


II - GLBIMR signed MoU with SAY Earth on 11th January 2026

GL Bajaj Institute of Management & Research (GLBIMR) proudly signed a Memorandum of Understanding with SAY Earth to advance water conservation initiatives and

sustainability awareness. The ceremony was graced by water conservationist Ramveer Singh Tanwar, whose inspiring words highlighted the urgency of responsible water management and the powerful role youth can play in protecting our environment.

Through joint workshops, community outreach programs, and student-led projects, this collaboration marks a shared commitment to building a more sustainable future and nurturing environmental stewardship among future leaders.



III - GLBIMR Students Participate in Plantation Drive on Makar Sankranti

On the auspicious occasion of Makar Sankranti, PGDM students of GL Bajaj Institute of Management and Research (GLBIMR) actively participated in a Plantation Drive organized by the City Hawk Sports Foundation, demonstrating their commitment to environmental sustainability, social responsibility, and community welfare. The initiative aimed to promote ecological awareness and encourage collective action toward creating a greener and healthier environment. Through their enthusiastic participation, students contributed to a meaningful cause while reinforcing the importance of environmental stewardship.

The event echoed the timeless message "वृक्षो रक्षति रक्षितः"—Those who protect trees are protected by them, highlighting the critical role of tree conservation in ensuring a sustainable future for generations to come. The plantation drive served as a reminder that small yet conscious efforts can lead to significant environmental impact. By engaging in this initiative, GLBIMR students reaffirmed their dedication to responsible citizenship and sustainable development, taking a meaningful step toward building a greener tomorrow.



IV - UPAY - GL Bajaj Student Chapter organized an Inter-College Debate Competition on February 25, 2026

The Inter-Institute Debate 2026, organized by the Centre for Sustainability at GLBIMR in collaboration with UPAY NGO, was successfully held on 25th February 2026 at the GL Bajaj campus, Greater Noida. Centered on the thought-provoking theme, "Digital India: Is Ethical Progress Possible in the Age of Rapid Technology?", the event brought together 25 teams from

reputed institutions to engage in meaningful discussions on some of the most pressing challenges of the digital era.

The competition witnessed enthusiastic participation and a high level of intellectual engagement, making it a remarkable platform for youth-led dialogue on responsible technological advancement.

Winners:

Winner (1st Place):

Keshav Rai & Palak – Lovely Professional University

1st Runner-Up:

Lavy Goel & Shivam Kumar – GLBIMR

2nd Runner-Up:

Neetisha Kapil & Srishthi Semwal – University of Delhi

Solo Category Winner:

Pragya - KCC Institute



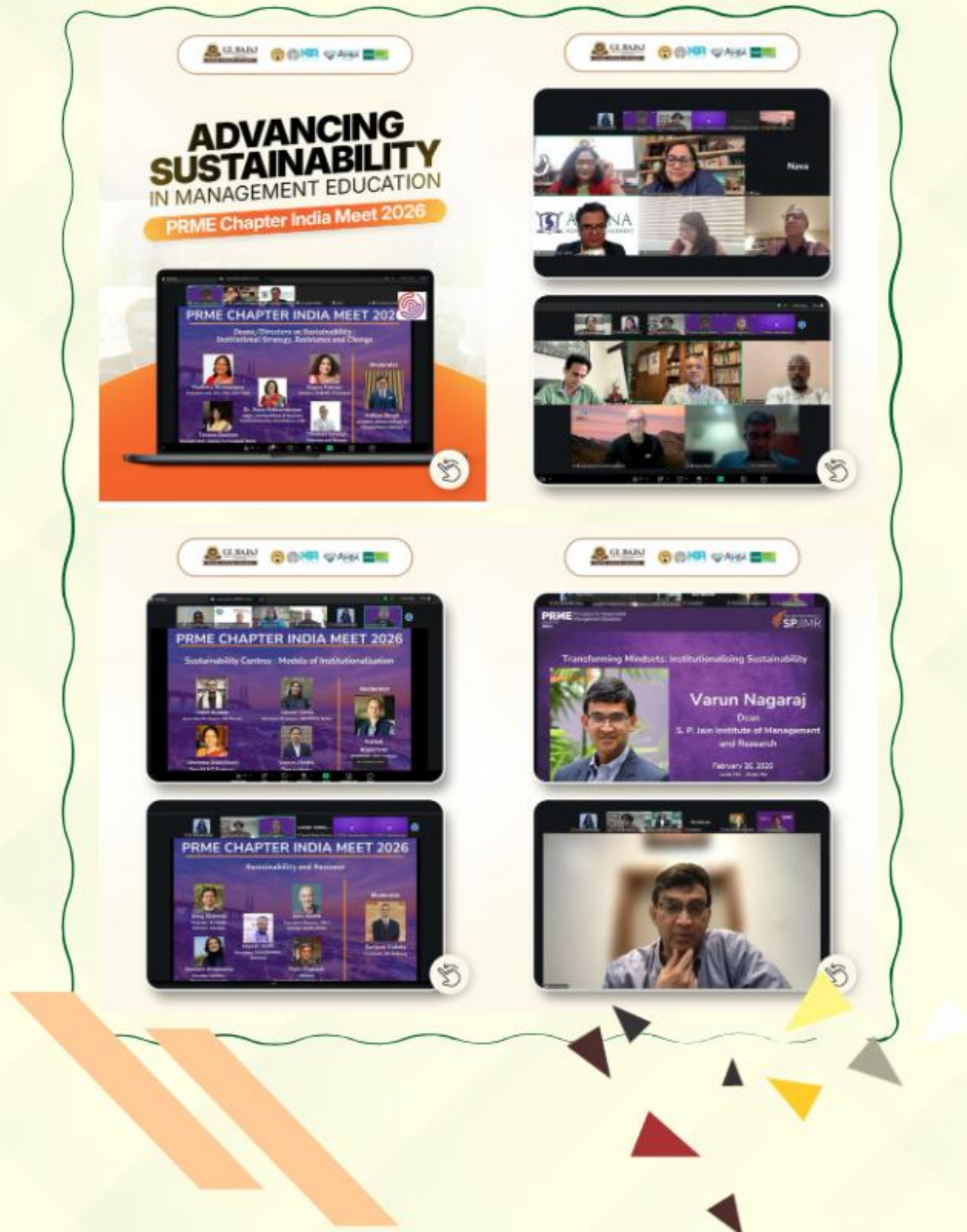
V - GLBIMR participated in online PRME India Chapter Meet 2026 on February 26, 2026

GL Bajaj Institute of Management and Research proudly participated in the PRME Chapter India Meet 2026, held virtually under the theme "Sustainability and Business." Dr. Sapna Rakesh, Director, GLBIMR,

joined as a distinguished panel speaker, sharing valuable insights on institutional leadership for sustainability and the role of management education in building responsible business practices.

The meet brought together leading academicians and practitioners to discuss sustainability integration,

governance frameworks, curriculum transformation, industry collaboration, and measurable impact models. Together, the discussions reinforced a shared commitment to advancing responsible management education and strengthening the PRME agenda in India.



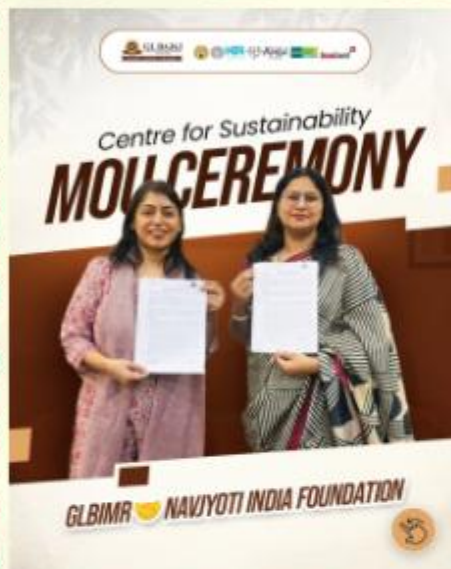
VI - GLBIMR Renews Partnership with Navjyoti India Foundation for Sustainable Community Impact

The Centre for Sustainability at GL Bajaj Institute of Management and Research (GLBIMR) has renewed its year-long partnership with Navjyoti India Foundation, strengthening a

shared commitment to fostering sustainable development and creating meaningful impact at the grassroots level.

The collaboration aims to empower aspiring entrepreneurs through digital skill development, improved market access, and enhanced opportunities for economic growth. By combining

academic expertise with community engagement, the partnership seeks to address real-world challenges and promote inclusive development within under served communities.



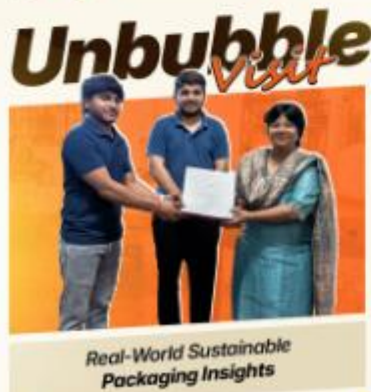
VII - PGDM Students Explore Sustainable Innovation at Unbubble

As part of their experiential learning journey, the PGDM Batch 2025-27 visited Unbubble to gain firsthand insights into how sustainability is integrated into modern business operations. The industrial visit

provided students with an opportunity to observe sustainable practices in action, from the development of biodegradable packaging solutions to efficient and environmentally responsible production processes.

The visit offered valuable exposure to real-world challenges and practical

solutions, enabling students to understand sustainability beyond theoretical concepts. By interacting with industry professionals and witnessing innovative practices firsthand, students gained a deeper appreciation of how responsible business models can drive both economic and social value.



ENERGY IN NUMBERS

The Statistics Quietly Reshaping Our Future

**75
%**

In 2025, solar power contributed nearly 75% of the growth in global electricity demand, reaffirming its position as the leading driver of renewable energy expansion.

Solar is no longer an alternative source of energy—it has become the primary driver of global electricity growth, reshaping how nations power their economies.

Source: Ember, Global Electricity Review 2026

**38.8
%**

Renewables generated more electricity than coal globally for the first time in modern history.

A milestone once considered decades away has already arrived, marking a historic shift in the global energy landscape.

Source: Ember, Global Electricity Review 2026

**4600
GW**

The world is expected to add nearly 4,600 GW of renewable energy capacity between 2025 and 2030. That is equivalent to the combined installed power capacity of China, the European Union, and Japan today.

Source: International Energy Agency (IEA), Renewables 2025

**40
%**

Global battery storage additions surged by nearly 40% in 2025.

Energy storage is emerging as one of the fastest-growing technologies, helping solve one of renewable energy's biggest challenges—intermittency.

Source: International Energy Agency (IEA), Global Energy Review 2026

**950
Twh**

Electricity demand from data centres is projected to reach 950 TWh by 2030.

The AI revolution is also becoming an energy revolution, with digital infrastructure placing unprecedented demands on global power systems.

Source: International Energy Agency (IEA), Key Questions on Energy and AI, 2026



**05
Million**

The largest AI data centres under development could consume as much electricity as five million households combined.

The future of artificial intelligence will depend not only on computing power, but also on energy availability.

Source: International Energy Agency (IEA), Artificial Intelligence – Topics, 2026

**\$7.4
Trillion**

Global fossil fuel subsidies reached an estimated \$7.4 trillion.

This represents one of the largest market distortions in the global economy and continues to influence the pace of the clean energy transition.

Source: International Monetary Fund (IMF), Fossil Fuel Subsidies Data Update, 2025

**3.3
%**

India's fossil-fuel power generation declined by 3.3% in 2025.

As one of the world's fastest-growing economies, India is increasingly meeting new electricity demand through renewable energy rather than fossil fuels.

Source: Ember, India Country Profile 2026

**4.5
Million**

Air pollution contributes to approximately 4.5 million premature deaths globally every year.

The transition to clean energy is not only a climate imperative—it is also one of the world's largest public health opportunities.

Source: IMF & Global Burden of Disease Framework, 2024–25

**THE
ENERGY
ACCESS
PARADOX**

Around 685–730 million people worldwide still live without access to electricity.

At a time when AI data centres are projected to consume unprecedented amounts of power, hundreds of millions of people still lack something as basic as a light switch. This remains one of the greatest development challenges of the 21st century and lies at the heart of Sustainable Development Goal 7.

Source: International Energy Agency (IEA), 2025

FINAL THOUGHT

The future energy challenge is no longer simply about producing more electricity. It is about ensuring that energy is clean, affordable, reliable, and accessible to everyone. The decisions made today will determine whether the global energy transition becomes a story of innovation, resilience, and inclusion—or one of inequality and missed opportunity.

The Energy Innovators

Meet the Startups Powering India's Clean-Energy Future

India's journey towards affordable, reliable, and sustainable energy is being shaped not only by policymakers and large corporations but also by a new generation of entrepreneurs. Across the country, innovative startups are developing solutions that address some of the most pressing energy challenges—from battery technology and electric mobility to solar-powered agriculture and charging infrastructure.

These ventures are transforming ambitious sustainability goals into real-world impact, proving that innovation can play a powerful role in advancing Sustainable Development Goal 7: Affordable and Clean Energy for All.

INNOVATION IN ACTION

THE ENERGY INNOVATORS

Meet the Startups Powering India's Clean-Energy Future

India's clean-energy transition is being driven by a new wave of entrepreneurs who are turning bold ideas into scalable solutions. From advanced batteries and EV charging to solar-powered irrigation, these innovators are accelerating progress toward SDG 7: Affordable and Clean Energy for All.



**BOLD IDEAS. CLEANER FUTURE.
POWERED BY INNOVATION.**

1 LOG9 MATERIALS **Reimagining Battery Technology for India**



Bengaluru-based Log9 Materials is developing advanced battery technologies designed for Indian conditions. The company is known for its rapid-charging cells, Aluminium-Air Fuel Cell technology, and indigenous energy-storage solutions for EVs and beyond.

WHY IT MATTERS
Homegrown battery innovation strengthens energy security and supports the future of electric mobility in India.

2 OORJA ENERGY ENGINEERS **Bringing Clean Energy to Rural India**



Oorja Development Solutions provides solar-powered irrigation services to smallholder farmers through an affordable pay-per-use model. By replacing diesel pumps, Oorja reduces costs, increases productivity, and lowers emissions.

IMPACT SNAPSHOT

61,000+ Farmers Impacted	300+ Solar Irrigation Systems Deployed	Thousands of tonnes of CO₂ emissions avoided
------------------------------------	--	--

WHY IT MATTERS
Clean energy should reach every field and every farmer. Oorja is powering livelihoods sustainably.

3 PLUGZMART **Building India's EV Charging Infrastructure**



Chennai-based Plugzmart is solving India's EV charging challenge with ingeniously developed solutions. The startup became the first in India to receive ARAI certification for a high-power EV charger with its own controller and communication technology.

WHY IT MATTERS
The growth of EVs depends on reliable and accessible charging. Plugzmart is helping build the backbone of electric mobility.

4 EVJoints **Connecting Drivers to Charging Networks**



EVJoints is a digital platform that helps EV users find, access, and navigate charging stations across India. With thousands of charging points mapped across cities and highways, it improves convenience and builds confidence in EV adoption.

WHY IT MATTERS
Smart technology makes clean mobility simpler, faster, and more accessible for everyone.

INDIA'S CLEAN-ENERGY STARTUP ECOSYSTEM

- 1,500+** Climate-tech startups operating across India
- \$12+ BILLION** Cumulative funding attracted by India's climate-tech startups
- One of the **fastest-growing startup sectors** in the country

Source: Tracxn Climate Tech Data, 2025

GOVERNMENT INITIATIVES POWERING INNOVATION

Key national missions and schemes creating an enabling environment for startups:

- H₂ NATIONAL GREEN HYDROGEN MISSION**
Towards a global hub for green hydrogen production and export
- NATIONAL CRITICAL MINERAL MISSION**
Securing India's mineral supply chains for clean-energy technologies
- ACC BATTERY STORAGE PLI SCHEME**
Incentivising advanced battery manufacturing in India
- PM E-DRIVE PROGRAMME**
Promoting EV adoption and supporting charging infrastructure
- BATTERY WASTE MANAGEMENT RULES**
Building a sustainable and circular battery ecosystem

INNOVATION HUBS OF INDIA

From Bengaluru to Delhi, entrepreneurs across the country are building solutions for a cleaner tomorrow.

- BENGALURU**
Hub of deep-tech, batteries and energy storage innovation
- CHENNAI**
Leading in EV tech, charging solutions and mobility innovation
- DELHI-NCR**
Rising hub for clean energy, policy-tech and agri-energy
- MUMBAI**
Driving clean-tech, clean-tech startups and impact ventures



“The future of clean energy will be built not only in power plants and laboratories, but also in the minds of entrepreneurs who dare to reimagine how energy is produced, stored, and shared.”



Innovation today. Sustainable tomorrow. For everyone.

Sources: Ministry of New and Renewable Energy (MNRE), NITI Aayog, PIB, Startup India, Tracxn Climate Tech Data, Company Websites, News Reports (2024-2025)

FACULTY COORDINATORS



Let's build a greener, wiser, and more resilient future—together.

- Dr. Shuchita Singh



Responsible education shapes future leaders by highlighting institutional practices, academic innovations, student-led green initiatives, and community outreach programs. Each story is a testament to our shared journey towards the Sustainable Development Goals (SDGs) and our dedication to building a resilient, inclusive, and sustainable future.

- Dr. Sunita Chowdhury



India's sustainable future is within reach, with dedicated institutions guiding efforts in renewable energy, waste reduction, and eco-friendly practices for all.

- Dr. Nidhi Srivastava



GL Bajaj Institute of Management & Research

Plot No. 2, Knowledge Park-III, Greater Noida, U.P. 201306

