

International Energy Festival of Kerala (IEFK 2026) concludes successfully at KUFOS

The 3rd Edition of the International Energy Festival of Kerala (IEFK 2026), organized by the Energy Management Centre (EMC), was successfully held from 7th to 9th February 2026 at Prof. V.K. Damodaran Nagar, KUFOS Campus, Panangad, Ernakulam, under the theme "Empowering Kerala's Energy Future." The festival was conceived as a major platform to guide Kerala towards energy self-sufficiency, climate resilience, and a sustainable green future by integrating policy direction with technological innovation.

The festival was inaugurated by the Hon'ble Minister for Electricity, K. Krishnankutty, who reaffirmed the State's commitment to energy conservation, renewable energy development, and climate-responsive growth. In his address, he emphasized that innovative technologies and coordinated action among government departments, industries, research institutions, and academia are essential to ensure long-term energy security. The inaugural function was presided over by Shri. K. Babu, M L A. Shri. Puneet Kumar IAS, Additional Chief Secretary, Power Department, delivered the Keynote Address, while Prof. (Dr.) A. Bijukumar, Vice Chancellor of Kerala University of Fisheries and Ocean Studies (KUFOS), delivered the Foundation Day Talk. Dr. R. Harikumar, Director, EMC, welcomed the gathering and Shri. Johnson Daniel, Head of NMEEE & DSM, proposed the vote of thanks. Senior officials from the Electrical Inspectorate and the Department of Factories & Boilers extended felicitations.

The three-day festival featured technical sessions and policy discussions on energy efficiency, nuclear energy prospects, climate change mitigation, carbon markets, decarbonization pathways, smart grids, battery storage, and sustainable ESCO models. Former scientists from the Bhabha Atomic Research Centre (BARC) and international experts shared insights on nuclear energy and global energy transition strategies. A special panel also addressed lightning protection risk assessment for high-rise buildings.

Public engagement and capacity building were key highlights of the festival. E-cooking training for Kudumbashree members promoted clean cooking technologies and emission reduction. Awareness programmes on EV and industrial safety were conducted



with the Electrical Inspectorate and the Department of Factories & Boilers, alongside live demonstrations of energy-efficient and clean technologies.

The IEFK '26 Green Expo emerged as one of the main attractions of the festival, showcasing energy-efficient appliances, EV charging safety standards, battery energy storage systems, industrial energy efficiency solutions, and other innovative clean energy technologies. The Expo created a vibrant environment for interaction among policymakers, industries, energy auditors, students, researchers, and technology providers, fostering collaboration and knowledge exchange.

Student engagement was a major highlight of the festival, with competitions such as quizzes, essay writing, drawing, project presentations, and science exhibitions to promote energy awareness. Outstanding projects received the Prof. V.K. Damodaran Memorial Award. A painting session led by renowned artist Karaykkamandapam Vijayakumar added a creative touch to the event.

A key milestone of IEFK 2026 was the signing of MoUs between EMC and the NAM S&T Centre, UKF Engineering College, and Baseliros Mathews II Engineering College to enhance collaboration in sustainable energy research, innovation, and global partnerships.

The valedictory session was marked by the presence of Shri. C. Balagopal, Chairman, KSIDC, as the Chief Guest. Shri. Ajit Kumar, Executive Chairman of the Board of Public Sector Transformation, and Dr. Dinesh K., Registrar of KUFOS, also attended the closing ceremony. By combining high-level policy dialogue, technical expertise, research collaboration, industrial participation, and community outreach, IEFK 2026 concluded successfully, reinforcing Kerala's commitment to achieving energy self-sufficiency and shaping a resilient, sustainable energy future.

₹20,000 Crore Allocation Announced for Advancing CCUS in Key Industrial Sectors

India has outlined a ₹20,000 crore allocation over five years to support the development and deployment of Carbon Capture, Utilisation and Storage (CCUS) technologies. The initiative, referenced in the Union Budget 2026–27, aims to facilitate the transition of CCUS projects from pilot stages to commercial-scale implementation across selected industrial sectors.

The proposed rollout covers five sectors: chemicals, power, steel, cement, and refineries—industries that account for a significant share of industrial carbon emissions. The focus is on supporting technologies that can capture carbon dioxide (CO₂) emissions from industrial processes and power plants, enable their productive utilisation, or ensure safe geological storage where necessary.

CCUS involves three key stages: capturing CO₂ emissions at source, utilising captured carbon in products such as chemicals and fuels, and storing residual emissions in geological formations. The approach is viewed as particularly relevant for hard-to-abate sectors, where complete electrification or renewable substitution may not be immediately feasible.

From an energy efficiency perspective, CCUS deployment is expected to contribute to reduced carbon intensity of industrial energy use and



encourage process optimisation and improved plant design. Carbon utilisation pathways may also support better resource efficiency by reducing dependence on virgin raw materials in certain applications.

The policy direction aligns with India's long-term climate objectives and complements ongoing renewable energy expansion and energy efficiency measures. However, large-scale implementation will depend on technological readiness, cost competitiveness, infrastructure development, and regulatory clarity.

Industry stakeholders are likely to assess the operational and financial implications as details on implementation frameworks, incentives, and monitoring mechanisms are further clarified.

NBCC Incorporates ECSBC 2024 & ENS 2024 to Strengthen Sustainable Construction Practices

In a significant step towards promoting energy-efficient and sustainable construction, NBCC (India) Limited has formally incorporated the provisions of the Energy Conservation and Sustainable Building Code (ECSBC) Commercial 2024 and the Eco-Niwas Samhita (ENS) 2024 into the design and construction of its large commercial and residential projects.

The decision follows communication from the Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India, advising all Regional Business Groups and Strategic Business Groups of NBCC to refer to the updated codes while planning, designing, finalizing tender documents, and executing projects. The circular, issued on 19 February 2026, highlights the Government's continued push towards mainstreaming sustainable building standards across public sector infrastructure.

The ECSBC Commercial 2024 and ENS 2024 aim to enhance energy performance, reduce carbon footprint, and promote environmental sustainability

in building construction and operations. The codes provide comprehensive guidance on building envelope design including walls, roofs, and glazing; HVAC and mechanical systems; service hot water systems; interior and exterior lighting; electrical systems and motors; on-site renewable energy integration; water supply and waste management systems; and site planning and sustainability measures.

By incorporating these provisions, NBCC reinforces its commitment to aligning national construction projects with India's broader climate and energy efficiency goals. The integration of these codes is expected to improve building performance in terms of energy use, water efficiency, material optimization, occupant comfort, and renewable energy adoption.

This move reflects the ongoing efforts of BEE to advance energy-efficient and sustainable construction practices across the country, ensuring that large-scale infrastructure development contributes meaningfully to India's low-carbon growth pathway.

Ministry of Power Notifies New Appliance Labelling & Compliance Regulations, 2026

The Ministry of Power, Government of India, has notified the Bureau of Energy Efficiency (Appliance Labelling and Compliance) Regulations, 2026 under the Energy Conservation Act, 2001. The new regulations, which came into effect on 1 January 2026, aim to strengthen India's Standards & Labelling (S&L) Programme and reinforce the regulatory framework for appliance energy efficiency.

The regulations focus on enhancing transparency, ensuring uniform compliance, and strengthening monitoring mechanisms across the appliance market. With the implementation of these provisions, the emphasis shifts toward improved market surveillance—both offline and online—robust label verification processes, and check testing through identified laboratories. Oversight will be carried out by the Bureau of Energy Efficiency (BEE) in coordination with State Designated Agencies (SDAs).

A key provision of the regulations mandates that manufacturers, importers, and sellers must obtain prior written approval from BEE before affixing energy labels on notified appliances. This measure ensures that only approved and compliant models are permitted to carry the BEE star label, thereby improving the credibility and reliability of energy performance information available to consumers.

The strengthened framework aims to enhance consumer awareness, promote informed purchasing decisions, and improve the integrity of energy labelling across the market. By ensuring uniform compliance and accountability across manufacturers, importers, retailers, and e-commerce platforms, the regulations support India's broader commitment to energy conservation, sustainable consumption, and the transition toward a low-carbon future.

Mandatory Star Labelling Expanded to More Appliances from January 1, 2026

With effect from January 1, 2026, the Central Government has made energy efficiency star labelling mandatory for a wider range of household and industrial appliances. The move follows a notification issued by the Bureau of Energy Efficiency (BEE) and aims to promote informed consumer choices and improved energy performance across sectors.

Under the revised regulation, mandatory star labelling now applies to refrigerators, televisions, LPG gas stoves, cooling towers and chillers. The scope has also been expanded to include deep freezers, distribution transformers and grid-connected solar inverters. Several of these products were previously covered under voluntary labelling norms but are now required to comply with prescribed energy efficiency standards.

The updated framework is based on draft regulations issued in July 2025, which were opened for public consultation. Feedback from manufacturers, industry stakeholders and other participants was reviewed before finalising the mandatory provisions.

Star labelling had already been compulsory for appliances such as room air conditioners, ceiling fans, electric storage water heaters, washing



machines and LED lamps. Over time, efficiency benchmarks for these products have been revised to align with evolving energy standards and technological advancements.

Officials have indicated that the list of appliances under mandatory star labelling will continue to be reviewed periodically, ensuring that the regulatory framework remains responsive to changing consumption patterns and energy efficiency requirements.

Energy Efficiency Case Study Malabar Cements – Use of Discarded Water Bottles in Limestone Mine Blasting An Innovative Environment Friendly Technique

Abstract

Water bottles used for packaging drinking water are mostly made of Polyethylene Terephthalate (PET). After consumption, these plastic bottles are discarded. Only about 50% of the discarded bottles are recycled; the remainder are indiscriminately dumped on bare land and water bodies or incinerated. Buried PET bottles degrade land quality, as they take more than 1,000 years to decompose. Incineration of PET also releases harmful gases into the atmosphere.

Explosive cost is one of the major contributors to the day-to-day operating expenses of any mine. Air-deck blasting, in which an air deck (such as plastic spacers, wooden spacers, or chemically activated air bags) is introduced between explosive columns, is a well-established technique used worldwide to reduce explosive consumption and improve blast performance.

Recently, discarded water bottles have been used as air-decking material in blasting operations at a few mines in India. The trials showed a reduction in total explosive cost of approximately 7–16%.

Field Trials at MCL Mines

Considering the above facts, two experimental blasts were conducted in a Malabar Cements Mine during limestone (LS) and overburden (OB) extraction by inserting 1-litre discarded plastic water bottles between explosive columns.

Trial-1 (Limestone)

- Number of holes: 9
- Hole depth: 10 m
- Explosive used in conventional design: 400 kg
- Explosive used with discarded water bottles: 300 kg
- Number of bottles used: 36
- Since bottles were used for air decking, detonating fuse was used to ensure continuity within the blast holes (additional cost: ₹600/-)
- Total cost saving: ₹4,300/-



Trial-2 (Overburden)

- Number of holes: 44
- Hole depths: 8 m, 10 m, 11 m, and 12 m
- Explosive used in conventional design: 2,800 kg
- Explosive used with discarded water bottles: 2,350 kg
- Number of bottles used: 314
- Detonating fuse was used to ensure continuity within the blast holes (additional cost: ₹2,700/-)
- Total cost saving: ₹19,800/-

Conclusion

Today, the world is increasingly concerned about the greenhouse effect and global warming, primarily caused by excessive emissions of greenhouse gases, especially CO₂. In India, approximately 0.15 million metric tonnes (MMT) of CO₂ are released annually due to explosive detonation in mining operations.

The use of discarded water bottles as air decks in blasting can reduce CO₂ emissions by 5–11% and lower total explosive costs by 7–15%. Moreover, this technique was found to be effective in reducing explosive consumption and minimizing other environmental impacts of blasting, such as ground vibration and fly rock.

Approximately 50% of discarded water bottles end up in landfills, causing long-term land pollution due to the extremely slow decomposition of PET. By adopting this technique, valuable land resources can be conserved. Additionally, this approach can improve the socio-economic conditions of people living near mining areas, as waste collectors and rag pickers can generate additional income by collecting discarded plastic bottles.

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