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AFFORDABLE AND CLEAN ENERGY

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SUSTAINABLE DEVELOPMENT GOALS

RESEARCH

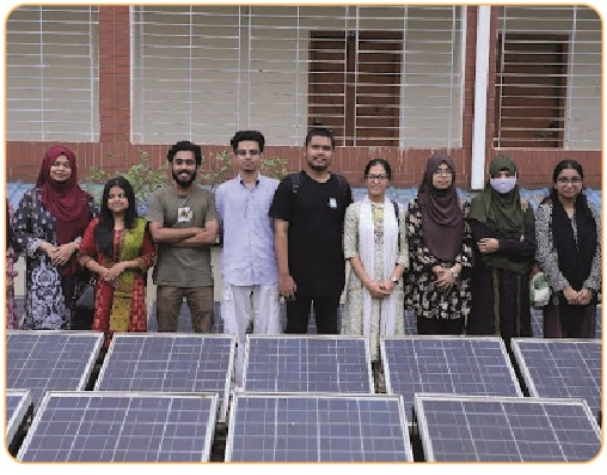
Circular Economy in Green Garments

This study investigates how circular economy practices influence the sustainable performance of Bangladesh's green garment industry. Based on survey data from 418 managers, the findings show that circular practices significantly improve environmental, financial, and social outcomes by enhancing resource efficiency and energy conservation. The study highlights circular production as a key strategy for achieving sustainable competitiveness in emerging economies.

IoT-Enabled Smart DC Microgrid

This study presents the design and implementation of a smart DC microgrid system integrating renewable energy sources—solar, wind, and DC generation—with battery storage and IoT-based real-time data analytics. A microcontroller manages power flow and system stability, while IoT connectivity enables continuous performance monitoring and optimization. Results highlight solar energy as the most reliable source of energy. The system demonstrates potential for intelligent, sustainable energy management, paving the way for advancements in AI-driven optimization, wireless energy harvesting, and peer-to-peer energy sharing in future microgrid networks.

EVENTS



Outreach Program on Renewable Energy Awareness

The Department of Electrical and Electronic Engineering (EEE) at BUBT organized an Outreach and Awareness Program to promote Sustainable Development Goal 7: Affordable and Clean Energy. The event educated local school and college students on renewable energy through interactive sessions, demonstrations, and hands-on learning with solar PV systems. Guided by faculty and senior students, participants learned about energy conservation and sustainability. The program extended BUBT's mission beyond campus, inspiring youth to embrace clean energy and environmental responsibility.

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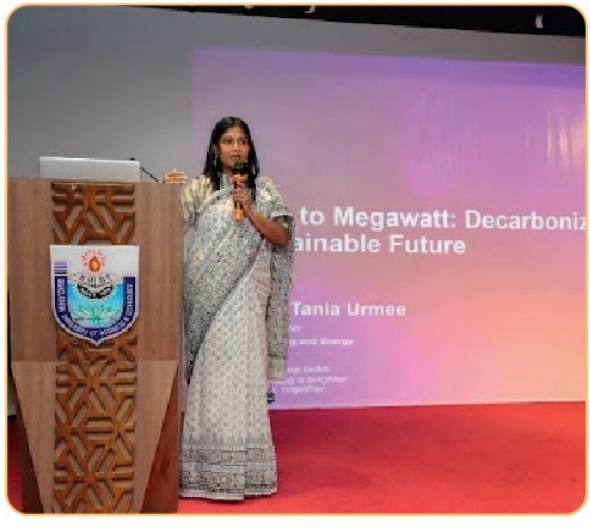
Seminars and Workshops on Renewable Energy and Energy Efficiency

To promote awareness and technical understanding of renewable energy and energy efficiency, Bangladesh University of Business and Technology (BUBT) organized a series of seminars and workshops aligned with Sustainable Development Goal 7: Affordable and Clean Energy. These programs aimed to educate students and faculty on emerging technologies, sustainable energy practices, and the global transition toward cleaner energy systems.

The events featured expert lectures, interactive sessions, and panel discussions on topics such as solar photovoltaic systems, wind energy, smart grids, and sustainable power solutions. Participants gained valuable insights into both theoretical concepts and real-world applications of renewable energy technologies, helping them understand how innovation and sustainability intersect in the modern energy landscape.

As part of this initiative, a distinguished faculty member from Murdoch University, Australia, was invited as a guest speaker to share her expertise and international perspective on renewable energy integration and sustainable energy policies. Her session enriched participants' understanding of global energy challenges and innovative solutions for achieving net-zero emissions. Through these knowledge-sharing initiatives, BUBT continues to foster academic and professional engagement in renewable energy, inspiring students and faculty to contribute actively to a sustainable and energy-efficient future.



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Industrial Visit to Karnaphuli Hydropower Station, Kaptai – Promoting Renewable Energy Awareness

Bangladesh University of Business and Technology (BUBT) organized an industrial visit to the Karnaphuli Hydro Power Plant in Kaptai, the only hydropower station in Bangladesh. The visit was part of BUBT's ongoing efforts to support Sustainable Development Goal 7: Affordable and Clean Energy, which aims to ensure access to reliable, sustainable, and modern energy for all.

During the visit, students observed the generation of electricity from hydropower — a renewable energy source that converts the kinetic energy of flowing water into clean electricity without harmful emissions. Engineers at the plant explained the operational principles of hydro turbines, generators, and control systems, providing students with valuable practical exposure to renewable energy technologies.

This hands-on experience deepened students' understanding of clean energy production and emphasized the role of renewable power in reducing dependence on fossil fuels and combating climate change. Faculty members accompanied the students to link academic learning with practical applications. Through such industrial visits, BUBT continues to reinforce its commitment to SDG 7, empowering future engineers to contribute to sustainable energy solutions for Bangladesh and beyond.