

THEME 04: RENEWABLE ENERGY



LIST OF ACTIVITIES

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2	Promoting the Usage of Clean Energy
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4	Study Tour to Mangla Hydro Power Plant
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6	Energy Conservation Building Code
7	Responsible Production and Conservation of Energy
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16	Seminar on Understanding Small Wind Turbines
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ACTIVITY 01: VISIT TO UNIVERSITY'S POWER HOUSE

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering in collaboration with the Directorate of Sustainability and Environment (DSE) organized a knowledge enriching Visit to the University's Power House(Solar Hub) to support SDG 07, specifically targeting 7.a to enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology. Students from different departments enthusiastically participated in seeing the Power House and the Solar Hub. The guests explained all the systems and technology used in the Power House, provided real-time values of different systems active in providing clean energy to the university, and answered questions from all the students. The modern technology used to balance the university's electrical loads drew the attention of students. The event encouraged the students to foster a culture of sustainability in and beyond the campus.



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ACTIVITY 02: PROMOTING THE USAGE OF CLEAN ENERGY"

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering organized an insightful Seminar on Promoting the Usage of Clean Energy to support SDG 07, specifically targeting 7.a, which aims to enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced cleaner fossil-fuel technologies. The seminar highlighted the significance of clean energy in mitigating climate change, reducing fossil fuel dependency, and advancing sustainable development. The session explored various clean energy technologies, including solar power, wind energy, hydropower, geothermal systems, and biomass, emphasizing their practical applications in homes, transportation, and industry. Participants gained a deeper understanding of the challenges in adopting clean energy, such as high initial costs and infrastructure limitations, along with solutions involving government incentives, technological innovations, and community awareness.



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ACTIVITY 03:

SUSTAINABLE ENERGY SOLUTIONS FOR DEVELOPING COUNTRIES

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering organized a Seminar on Sustainable Energy Solutions for Developing Countries to address global energy challenges and promote SDG 07. This seminar specifically targeted SDG 7.1, which aims to ensure universal access to affordable, reliable, and modern energy services. The session explored various renewable energy technologies, including solar power, wind energy, and bioenergy, emphasizing their role in providing clean and sustainable power solutions. Key topics included the benefits of solar panels in powering remote areas, wind turbines for scalable energy projects, and bioenergy as a means of turning organic waste into power. The seminar highlighted the importance of sustainable energy in eradicating poverty, combating climate change, and enhancing public health.



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ACTIVITY 04: STUDY TOUR TO MANGLA HYDRO POWER PLANT

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE), organized an insightful study tour to Mangla Hydro Power Plant to "Explore the Wonders of Hydropower and foster a deeper understanding of Sustainable Energy solutions" to support SDG 07, specifically targeting 7.1. Students actively participated in this educational excursion, gaining a deeper understanding of hydropower technology and its role in sustainable energy generation. Experts on-site provided a comprehensive overview of the dam's history, technical operations, and its contribution to national energy production. Students observed real-time operations of turbines and control systems, fostering an appreciation for the intricacies of renewable energy management. The tour concluded with an interactive Q&A session, inspiring students to engage in sustainable energy initiatives and innovative solutions for future energy challenges.



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ACTIVITY 05:

SDG'S EXPO: AFFORDABLE AND CLEAN ENERGY

Organized By:
Theme 04 Team



A dedicated stall focused on SDG 07: Affordable and Clean Energy, featuring a final year project (FYP) that harnessed energy from both solar and wind sources, showcasing a hybrid renewable energy system designed to provide reliable and sustainable power solutions. The project captivated visitors with its innovative approach to dual-energy harvesting, emphasizing its efficiency, cost-effectiveness, and contribution to sustainable energy practices.

The event concluded with a certificate ceremony recognizing the efforts of the SDG Ambassadors for their participation and contributions. As the Ambassador of SDG 07, Mr. Aitzaz Arshad received recognition for leadership and dedication to promoting clean and affordable energy solutions. The Expo served as an inspiring platform to advance sustainable development through technological innovation and collaborative action.



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ACTIVITY 06: ENERGY CONSERVATION BUILDING CODE

Organized By:
Theme 04 Team



The event brought together students, faculty, and industry experts to discuss the importance of energy efficiency and sustainable building practices. Our esteemed guest speaker, Dr. Zeeshan Ullah, Director Buildings, NEECA, Ministry of Energy Pakistan, provided valuable insights into the ECBC-2023. The interactive seminar highlighted the code's key provisions and its potential to reduce energy consumption and promote sustainable development. This partnership between CUST and NEECA is poised to drive sustainable development and innovation in Pakistan's energy sector, paving the way for a greener and more energy-efficient future. By fostering collaboration between academia, industry, and policymakers, this effort contributes to sustainable infrastructure development, supporting SDG 7 (Affordable and Clean Energy), specifically Targets 7.3 which aims, By 2030, double the global rate of improvement in energy efficiency”.



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ACTIVITY 07: RESPONSIBLE PRODUCTION AND CONSERVATION OF ENERGY

Organized By:
Theme 04 Team



The Directorate of Sustainability and Environment (DSE), in collaboration with CUST GYM CLUBS, organized an FM talk on "Responsible Production and Conservation of Energy" to support SDG 7.2 (Affordable and Clean Energy). The session highlighted practical strategies for responsible energy use, the environmental and economic impacts of energy consumption, and the role of individuals and institutions in promoting sustainability. By engaging students in discussions on renewable energy, smart consumption, and waste reduction, the talk fostered critical thinking, problem-solving, and global awareness. It reinforced how education plays a key role in equipping individuals with the knowledge and skills needed to tackle sustainability challenges. The session concluded with a call to action, encouraging energy-efficient habits and reinforcing the link between education and environmental responsibility for a sustainable future.



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ACTIVITY 08:

ANIMATED SCREENING - THE MAGIC SCHOOL BUS: GETTING ENERGIZED

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, hosted an animated screening of "The Magic School Bus: Getting Energized." The screening provided school students with a fun and educational introduction to energy sources, including renewables like solar, wind, and water power. This event supported SDG 07, addressing Target 7.1, by introducing basic concepts of energy access and sustainability, and Target 7.5, by promoting energy education for youth in a developing country through an engaging and accessible format.



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ACTIVITY 09: DIGITAL POSTER COMPETITION: CONSERVATION OF ENERGY

**Organized By:
Theme 04 Team**



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, organized a Digital Poster Design Competition titled "Innovative Solutions for Renewable Energy Transition." This event encouraged students to design and submit digital posters envisioning advanced renewable energy technologies and smart grids. It was aligned with SDG 07, particularly Target 7.2, by promoting student-led awareness of renewable energy's importance in transitioning away from fossil fuels, and Target 7.4, by fostering creative engagement with research and technological innovation in clean energy. The competition showcased the role of youth in spreading sustainability through digital creativity.



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ACTIVITY 10: HOW GREEN ENERGY WILL CHANGE OUR FUTURE?

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, hosted a school visit for the awareness of "How Green Energy Will Change Our Future." The awareness talks exposed school students to global green energy solutions, climate change mitigation strategies, and the importance of sustainable technologies. It aligned with SDG 07, specifically Target 7.2, by promoting broader public awareness of renewable energy integration and Target 7.4, by facilitating access to clean energy research and innovation in an educational setting.



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ACTIVITY 11: HAND-DRAWN POSTER COMPETITION

**Organized By:
Theme 04 Team**



CERTIFICATE OF APPRECIATION

This certificate is presented to

MUHAMMAD ALI HASSAN

for participating in,
HAND DRAWN POSTER COMPETITION
at CUST in collaboration of Green Youth Movement Club with
Directorate of Sustainability and Environment,
Theme: "Renewable Energy for a Sustainable Future"

Engr. Suleman Khan
Representative from ECE

Dr. Noor Muhammad Khan
HOD ECE

CERTIFICATE OF APPRECIATION

This certificate is presented to

GULFAM HAIDER

for participating in,
HAND DRAWN POSTER COMPETITION
at CUST in collaboration of Green Youth Movement Club with
Directorate of Sustainability and Environment,
Theme: "Renewable Energy for a Sustainable Future"

Engr. Suleman Khan
Representative from ECE

Dr. Noor Muhammad Khan
HOD ECE

CERTIFICATE OF APPRECIATION

This certificate is presented to

ZARYAB TANVEER

for participating in,
HAND DRAWN POSTER COMPETITION
at CUST in collaboration of Green Youth Movement Club with
Directorate of Sustainability and Environment,
Theme: "Renewable Energy for a Sustainable Future"

Engr. Suleman Khan
Representative from ECE

Dr. Noor Muhammad Khan
HOD ECE

The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, organized a Hand-Drawn Poster Competition under the theme "Renewable Energy for a Sustainable Future." The event aimed to raise awareness and spark creativity among students regarding clean and renewable energy. Participants illustrated sources such as solar, wind, and hydro energy. This initiative directly supported SDG 07, specifically Target 7.1, by fostering understanding of the need for universal access to modern and reliable energy services, and Target 7.2, by promoting the role of renewables in the global energy mix. Each poster was evaluated on creativity, originality, and relevance, and e-certificates were distributed to acknowledge the participants' contributions.



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ACTIVITY 12: STUDENT SURVEY - RENEWABLE ENERGY

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, organized an awareness survey among school students to assess their understanding of clean energy and SDG 07. The survey featured multiple-choice and opinion-based questions, engaging students to reflect on their knowledge, behavior, and attitudes towards sustainable energy. The activity contributed to Target 7.1, by educating students on the significance of universal energy access; Target 7.2, by promoting the shift towards renewable energy in public awareness; and Target 7.5, by facilitating outreach and energy education in a developing country context.



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ACTIVITY 13:

STUDY VISIT - EXPLORING THE ENERGY BACKBONE OF CUST

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, conducted an educational study visit titled "Exploring the Energy Backbone of CUST." Students were given an in-depth tour of the university's 1MW solar power setup, energy-efficient infrastructure, HT/LT panels, inverters, and backup generator systems. The visit provided students with practical exposure to power generation, load distribution, and power factor correction. This event effectively supported Target 7.1 by highlighting access to reliable and modern energy, Target 7.3 by demonstrating improvements in energy efficiency, and Target 7.4 by providing access to real-world applications of clean energy technologies.



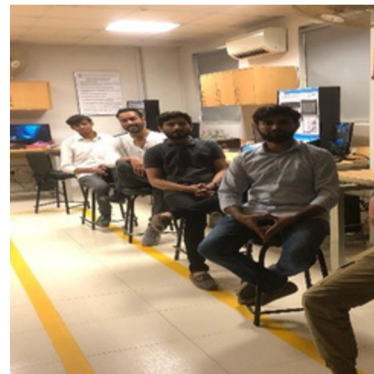
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ACTIVITY 14:

SEMINAR ON ROOFTOP SOLAR INSTALLATIONS DESIGNING

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, organized a lab seminar titled “Designing Rooftop Solar Installations.” The session introduced students to the technical and practical aspects of solar energy, including panel orientation, inverters, net metering, and maintenance. Demonstrations and group discussions enhanced understanding of rooftop systems. The session aligned with SDG 07, specifically Target 7.2, by promoting renewable energy awareness, and Target 7.4, by increasing access to clean energy technology in an educational context.

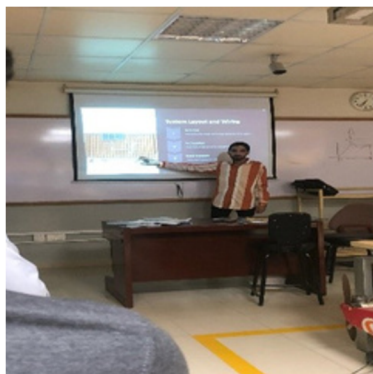


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ACTIVITY 16: SEMINAR ON UNDERSTANDING SMALL WIND TURBINES

Organized By:
Theme 04 Team



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE) and the GYM Club, conducted an insightful lab discussion titled “Understanding Small Wind Turbines.” The session provided a platform for students to explore the core components of wind turbines, their role in energy generation, optimal site selection strategies, and the practical challenges faced in real-world applications. It directly supported Sustainable Development Goal (SDG) 07, particularly Target 7.1, by promoting awareness of affordable, reliable energy solutions, and Target 7.2, by encouraging the adoption and understanding of renewable wind energy systems as a viable alternative for future energy needs.



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ACTIVITY 17: SUSTAINABLE STROKES- ART FOR ENERGY AND WELL-BEING

Organized By:
Theme 04 Team



The Department of Psychology, in collaboration with the GYM Club and the Directorate of Sustainability and Environment (DSE), organized “Sustainable Strokes – Art for Energy & Well-being,” a powerful art exhibition aimed at raising awareness around mental health and sustainability. The students showcased thought-provoking posters and paintings that explored emotional well-being, social challenges, and the role of clean energy in promoting a healthier world. The exhibition offered a unique blend of creativity and consciousness, with several artworks illustrating the connection between renewable energy and human well-being. By bridging the gap between artistic expression and environmental advocacy, the event advanced SDG 07 (Target 7.2 – increasing awareness of renewable energy through innovative, creative channels).

