ANNUAL REPORT

SDG-13
CLIMATE ACTION

UNIVERSITY OF CHITTAGONG

Chittagong-4331, Bangladesh

SDG 13: CLIMATE ACTION AND THE UNIVERSITY OF CHITTAGONG

In its serene landscape, the University of Chittagong has notable initiatives towards environmental stewardship and climate action. Established in 1966, this institution has excelled in academia and embraced its responsibility towards Sustainable Development Goal (SDG) 13 - Climate Action, demonstrating a profound commitment to mitigating climate change and fostering a sustainable future.

Restoring over 600 acres of barren hills is at the heart of its environmental efforts. Led by the Institute of Forestry and Environmental Sciences (IFES) and the Department of Botany, this initiative has transformed the once-barren terrain into a lush expanse of indigenous flora. This endeavor extends beyond mere conservation, as the university's campus now functions as a significant carbon sink. In an ongoing effort to quantify its impact, the university assesses these areas' total carbon stock and annual carbon removal. The university's partnership with Teijin Ltd, a Dutch-based Japanese company through IFES, marks a significant milestone in its climate action journey. Together, they have embarked on an ambitious carbon capture project. By establishing a Miyawaki model forest on campus, the initiative targets the removal of over 114 tons of carbon. Completed in 2022, this project contributes to global carbon reduction efforts and offers a hands-on learning experience for students, embedding practical environmental education into the curriculum.

Chittagong University has also taken significant steps to reduce its carbon footprint in its quest for sustainability. An estimation using i-Tree tools showed more than 80% of the campus is under canopy coverage. Those trees sequestered carbon annually in an amount of 2.18 kt and stored it in a tree of about 54 kt, with a value of 42,613948 BDT and 1070196138 BDT, respectively. A notable measure includes limiting air conditioner use across the campus; a policy move aimed at curbing energy consumption. The forest annually contributes to removing atmospheric pollutants CO, NO_2, O_3, SO_2, PM 2.5, and PM 10. Because of the forest, surface runoff was reduced, and the area received other hydrological benefits. The university's infrastructure – the academic buildings and student dormitories – have been deliberately designed to maximize natural lighting and ventilation to reduce energy consumption despite the large number of students and faculty. This is the only university in Bangladesh with dedicated trains for commuting students, dramatically decreasing the students' transpiration-related carbon footprint. Recently, the University adopted an increased train schedule to lower the transport footprint. The replacement of CNG vehicles with a growing number of Battey Riskwha has further reduced CO_2 emissions of campus commuters. There is another initiative to introduce electric carts for cyclic campus transport that will deliberately reduce transport-related carbon footprint.

The pursuit of renewable energy solutions is at the forefront of the university's climate strategy. The university seeks to establish a solar park and install rooftop solar panels, marking a shift towards clean energy sources. This initiative reflects the university's proactive approach to reducing emissions from conventional energy use. Faculty members from the Department of Chemistry and Physics collaborate locally and internationally on solar cell research. Research endeavors at IFES are aligned with sustainable energy solutions, focusing on improved cookstoves and biogas production from waste to reduce dependence on biomass as primary fuels, thereby minimizing deforestation for fuelwood and lowering CO_2 emissions. Such innovative research contributes to local sustainability and offers scalable solutions for broader applications.

Education and advocacy form the backbone of Chittagong University's climate action efforts. A diverse range of courses, including dedicated content on climate change, is offered across various departments. Faculty members are pivotal in guiding government and non-government entities on energy and climate change matters, leveraging their expertise for broader societal impact. Faculty members and students are engaged with government initiatives to achieve a net-zero emission future for Bangladesh. IFES faculty members were involved with reporting of Nationally Determined Contribution (NDC) reporting for the country.

The university plans to conduct an energy audit to enhance its sustainability practices further. Based on the student-centric energy audit at IFES, the institute has already replaced less efficient electrical appliances with more efficient ones. The university is in the process of formulating a comprehensive energy policy for climate actions through the promotion of energy efficiency and renewable energy. In coming years, annual reports on the total emissions by sectors of activities and the mitigative measures with net impacts will be reported.

The University introduces anti-plastic activity that feeds climate change and reduces campus pollution. Department of Marine Science and IFES separately researched culturing and developing marine algae for carbon capture initiatives. Initiative for an improved water management system for the student's hall and the residential areas inside the campuses.
In many departments and institutes, energy efficiency, climate change, adaptation, and mitigation towards climate change are part of the curriculum as an entire course or as part of related courses. IFES has completed courses on climate change and energy management. The university also plans to start dedicated undergraduate and MS programs on climate change. Chittagong University stands as a testament to the power of academic institutions in driving positive environmental change. Through ecological restoration, cutting-edge research, policy initiatives, and educational programs, the university enriches the lives of its community and contributes significantly to the global fight against climate change. Its comprehensive and proactive approach inspires universities worldwide, illustrating how academic institutions can be at the forefront of environmental sustainability and climate action.