

CARBON FOOTPRINT OF VARIOUS HIGHER EDUCATION INSTITUTES (HEIS) IN ISLAMABAD, PAKISTAN: A WAY FORWARD TOWARDS CARBON NEUTRAL CAMPUSES

Sami Naeem¹, Fiza Sarwar² and Anjum Rasheed¹

¹CCRD, COMSATS University Islamabad, Pakistan

²Bahria University Islamabad, Pakistan

This paper presents an activity-based carbon footprint of five universities of Islamabad, Pakistan including emissions from different activities classified under GHG protocol corporate standard. Raw data on five parameters were collected from universities. The gross GHG emissions from all five universities are accounted as 17,608.31 MTCO₂eq. The results showed that 65% of the gross emissions are coming from air conditioning and refrigeration from all universities due to the usage of internationally phased-out refrigerant (R22) with high GWP, whereas, emissions from purchased electricity and transport are also prominent with 16.5% and 12% of gross emissions, respectively. Furthermore, 5% of emissions are from electricity generation while the contribution of air travel has observed to be 1.5%. Another key finding is that universities having a substantial number of students/faculty have the lowest per capita as compared with the universities having a lesser number of students/faculty. Excessive energy consumption and consequent emissions highlight the need to implement policies that address the use of cleaner fuels, energy efficient equipment and to implement the 'Kigali Amendment under Montreal Protocol'. This is the most updated study for any institution in Pakistan. A mitigation action plan is developed consisting of strategies to offset emissions resulting in the transformation of universities into carbon-neutral.

sami.naeem@comsats.edu.pk
samikhan90@live.com