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Carbon Emissions due to Electricity Consumption in the Residential Sector

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Concentration of greenhouse gases (GHG) in the atmosphere has increased rapidly due to anthropogenic activities resulting in significant increase in the temperature of the earth causing global warming. Among the GHG's, carbon dioxide is the most dominant gas causing global warming which accounts for nearly 77% of global total CO₂ equivalent GHG emissions (IPCC 2007c). Carbon dioxide concentration in the atmosphere has been rising alarmingly in the post industrial revolution era and the current level is about 379 ppm (ppm = parts per million) compared to 280 ppm earlier (pre industrialisation). Concentration of greenhouse gases (GHG's) in the atmosphere has increased rapidly due to anthropogenic activities resulting in significant increase in the temperature of the earth. The energy radiated from the sun is absorbed by these gases making the lower part of the atmosphere warmer. The sources of greenhouse gases (GHG) come from various sectors including transportation, industrial processes, power generation for residential consumption, agriculture and deforestation. Sector wise analysis of annual GHG emission shows that electricity generation (21.3%), industrial processes (16.8%) and transportation fuel (14%) are the major sectors contributing primarily to GHG. In this backdrop, it is necessary to know the energy consumption structure to reduce carbon dioxide emission through shift in energy sources or end use efficiency improvements. Survey was conducted to know the energy consumption structure, also community and neighborhood of households of Bangalore. A total of 1967 households were surveyed from different wards of Bangalore. Survey data includes data about environment satisfaction, residential status, Building type, kind of facilities near the home and energy consumption behavior of households. Analysis was done according to ward wise and also for overall data. Analysis shows that more than 50% satisfied with overall environment, residential status of 70% household is local urban resident. 80% household uses LPG for cooking and 11% use both LPG and electricity. For water heating 40% uses electrical heater and only 24.76% uses solar water heater which is one of the source of reducing energy consumption and only 30% have installed solar appliances in home. Greater Quantification of emissions from domestic sector of Bangalore contribute about 4273.81 (9.65% of total emissions) Gg.

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