

Investigation of Energy Use Pattern and Emission Discharge in Nigeria: A Case Study of South West Zone

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Abstract

Electricity demand has increased with population growth, industrialization and civilization. Most householders are barely conscious of the conservative measures for available limited supply, while the environmental impact has rarely been taken into cognizance by consumers. The study examines end-users attitude to energy consumption in Nigeria based on four scenarios. Gaseous emissions data obtained from prepaid and post-paid metering systems usage in low-income and high-income housing types were analyzed. Results obtained indicate strong relationship between energy use and emissions with significantly different emission generation. About 38% and 23% reduction in global warming and acidification potential is achieved by a switch to prepaid meters for both income earners. Post-paid low-income earners utilized the highest energy (59.8kW/hr) while the prepaid high-income earners had the minimum (31.1kW/hr). Energy use and greenhouse gas emissions from both earners followed similar trend. Prepaid metering system usage improves energy consumption, thereby offsetting global warming and acidification impacts.

Keywords: greenhouse gas emission, energy use pattern, metering system, electricity consumption

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