

Electricity Consumption Patterns in Households in selected regions of Sri Lanka

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The electricity consumption patterns of 61 households selected from Matara, Anuradhapura, Rathnapura, Nuwaraeliya and Kaluthara were studied using the monthly meter readings and calculating the energy consumption of equipment using their power ratings. Data were collected from each household using a questioner filled by undergraduates through discussions with residents and monitoring. The software package “MINITAB” was used for the analysis of data.

About 90.2% of households use less than 120 kWh of electricity per month in a household of average four residents and average monthly usage of all 61 households is about 72 ± 5 kWh (93 kWh and 39 kWh with and without refrigerators). A significant fraction of energy is consumed (51 ± 3 kWh or 55%) by refrigerators. By selecting refrigerators with lower capacity (100-200 L in compared with 200-300 L) and defrost technology could save about 9% and 18.5% of energy consumption, respectively. Opening the door less number of times (less than 5 times a day in compared with 15 times) could save significant amount (17 %) of energy consumed by refrigerators. Keeping the refrigerator filled only with necessary things helps to reduce the wastage. Some consumers save about 33% of energy consumed by refrigerators by keeping them turned off 9 hours in the night time. LED TV could save about 26.6% of energy used by a CRT TV. Replacing all incandescent lamps in a household by CFLs save about 63% of lighting energy, however in the sample studied 35% of lamps used are still incandescent. Fans (10.3 kWh, 14.3%), Televisions (8.2 kWh, 11.4%) and Rice Cookers (7.5kWh, 10.4%) use more monthly electricity in compared with other household appliances in the sample studied, which has no Air Conditioner users. The study shows that there is a possibility to save significant amount of electrical energy used in a typical household.

Keywords: Household Electricity Consumption

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