

Photovoltaic System: An Alternative to Energy Efficiency in a Residence

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Abstract : The concern to carry out a study related to Energy Efficiency arose based on the various debates in international television networks and not only, but also in several forums of national debates. The concept of Energy Efficiency is not yet widely disseminated and /or taken into account in terms of energy consumption, not only at the domestic level but also at the industrial level in Mozambique. In the context of the energy audit, the time during which each of the appliances is connected to the voltage source, the time during which they are in standby mode was recorded on a spreadsheet basis. Based on these data, daily and monthly consumption was calculated. In order to have more accurate information on the daily levels of daily consumption, the electricity consumption was read every hour of the day (from 5:00 am to 11:00 pm), since after 23:00 the energy consumption remains constant. For ten days. Based on the daily energy consumption and the maximum consumption power, the design of the photovoltaic system for the residence was made. With the implementation of the photovoltaic system in order to guarantee energy efficiency, there was a significant reduction in the use of electricity from the public grid, increasing from approximately 17 kwh per day to around 11 kwh, thus achieving an energy efficiency of 67.4 %. That is to say, there was a reduction not only in terms of the amount of energy consumed but also of the monthly expenses with electricity, having increased from around 2,500,00Mt (2,500 meticaïs) to around 800Mt per month.

Keywords : energy efficiency, photovoltaic system, residential sector, Mozambique

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