A Dual Axis Solar Tracker as a Hybrid Solar Harvesting Tool as an Alternative Energy Provider for Rural Areas in Kenya

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Sustainable power source part in Kenya is among most dynamic in Africa. In Kenya, speculation developed has gone from virtually zero to US dollar 1.3 billion in 2010 over advancements such as geothermal, small scale hydroelectric power biofuels and more. Solar energy has become a very important means of renewable energy resource in Kenya and most of other developing world countries. Some solar cells with generally higher efficiencies however show a trend to be exorbitant. An approach to expand the proficiency of solar panels while considering expenses is to use trackers. Through tracking the sun, the panels will have more exposure to the sun, influencing it to have expanded power yield. Dual axis trackers tend to be more productive than single axis since they track light from both vertical and horizontal axes. This project describes the plan, development and designing of a model for sun based following framework that has a dual axis of movement which utilizes Light Dependent Resistors (LDRs) for light identification. The control circuit depends on an ATMega328P microcontroller. It was modified to distinguish light by means of the LDRs before activating the micro servo to position the solar panel, then solar panel is then oriented to the sun where maximum light is available for great yields of power. We uploaded a code to get the various voltages and current from the serial monitor. In conclusion, the increased control has impressively and accordingly justified the system irrespective of the little increment in cost from the fixed system.

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