AN OPEN-SOURCE HARDWARE I-V CURVE TRACER FOR MONITORING PV OUTPUT IN BOLIVIA

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ABSTRACT

The development of an open-source I-V curve tracer for monitoring PV output in Bolivia and the results are presented. The device is made of low cost elements, and it is possible to adapt the design in order to monitor PV devices with different power outputs. Using a variable load, the I-V curve tracer samples the current and voltage for numerous points along the current-voltage curve of the PV panel. The device utilizes a control regime that automatically connects and disconnects the solar panel from a load at fixed time intervals to take the I-V curve measurements. This enables the device to be used for extended monitoring even when the panel is in normal use as part of a PV system.

Keywords: I-V Curve, Photovoltaic, PV Output Monitoring, Solar Energy, Renewable Energy, Open Source.