

Title:	GSM Control System Of An Open Area (Street) Lighting In Hebron/ Palestine Using Photovoltaic Energy Source
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Abstract: This paper presents the utilization of generated electrical power from photovoltaic solar panels in open area lighting with a modern GSM wireless control system. Open areas such as Al-Hesbah Street in Hebron which its lighting fixtures are supplied with 24V DC from Photovoltaic energy source. As the load will be fed during night and the main grid will not be utilized, long life deep discharge batteries will be used to store the generated electrical energy from the photovoltaic solar panels during the day time. Batteries charge will be controlled by 24V charge controller. Turning the Light Emitting Diode fixtures on and off and dimming them are accomplished by GSM. GSM is an open, digital cellular technology used for transmitting mobile voice and data services. It is a modern method in street lights controlling especially because of its ability to cover long distances. Particularly can be used by the municipalities and remote control centres .The system will communicate via the GSM network to a central computer to determine when the lights should be illuminated, how bright they should be lit based on ambient light levels, and to also dim the lights after dark when the areas have less traffic. Applying this technology to public lighting, energy savings would be incredible, as well as resulting in far less light pollution. If the Public lights were fitted with solar panels, making the system self- powering, the system will be more efficient. The whole system is controlled by using a PIC microcontroller.

Keywords: *Photovoltaic; GSM; PIC Microcontroller; Street Lighting; LED Lamps*