Using Solar Energy for Irrigation in Kirkuk City and Outskirt

In this study, the possibility of using the produced energy from solar energy system for irrigation in Kirkuk city and outskirt is studied. The power from the photovoltaic PV panel is (300 W). Three values for the well depth (h) which are (60,70, and 80 m) are used respectively. Depending on the data from Iraqi Meteorological Organization and Seismology, the relations between the angle of solar radiation along the year, the solar radiation, and the actual and theoretical solar brightness in each month showed in graphical diagrams. The volume flow rate was represented graphically for each value of well depth. It was found that the volume flow rate increase with increasing PV panel power and the solar system is more efficient in mid-day and at mid-year (summer season). However, flow rate was inversely proportional and affected by the well depth. The solar power from the PV panel can be used in irrigation since the volume flow rate from the system fulfil water requirements for most crops that cultivated in Kirkuk city.