

The village of Beit Dajan, Nablus, faces frequent electricity outages, making water pumping for agriculture and daily use unreliable and expensive. The expected outcome is a reliable and scalable solar-powered system that reduces dependence on fossil fuels and enhances water access in rural areas, benefiting similar off-grid communities. This project proposes a battery-free solar water pumping system to replace traditional grid and diesel-powered pumps. By using photovoltaic (PV) technology, the system directly converts sunlight into electricity, eliminating the need for batteries or backup power.