

A Cost Effective Solar Powered Water Pump Solution for Household Application in the Rural Area of Bangladesh

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Abstract : Developing countries like Bangladesh has huge population lives in the rural areas out of electricity. They are using manually operated tube well for collecting underground water to meet their daily demand. A human labour is required to lift water from tube well. Sometimes, it is impossible for a elementary school going child to operate a tube well in the school. Solar powered water pump could be a sustainable water pumping solution in the rural area of Bangladesh. To minimize the cost, a 0.5 horse power solar water pump is designed considering the requirement of water for a typical house hold in this research. A prototype of the 0.5 hp capacity system is implemented and tested in the rooftop of the university lab to validate the performances. Based on the experimental data, the performance of the system is analyzed and presented in this paper.

Keywords : water pump, solar photovoltaic module, performance analysis, feasibility study

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