



Could solar-powered irrigation be a solution to water management in agriculture?

Solar-powered irrigation: A solution to water management in agriculture? Stephanie Roblin explores the use of solar power in farming and explains why it could be an ideal solution to irrigation in developing countries. Farmers have always played a significant role in our society as they provide the world's population with food.

What is solar-powered irrigation?

Solar-powered irrigation is a cross-cutting topic that requires not only expertise in solar energy (by planners and suppliers), but also in water management/irrigation and agriculture (by technical government staff, agricultural extension workers and farmers).

Are solar powered irrigation systems a viable alternative energy source?

Solar powered irrigation systems (SPIS) provide reliable and affordable energy, potentially reducing energy costs for irrigation. Particularly in rural areas, where cost of diesel fuel is high or where reliable access to the electricity grid is lacking, they can provide a relatively flexible and climate-friendly alternative energy source.

How much does a solar-powered irrigation pump cost in West Bengal?

In West Bengal, farmers pay USD 1.03/hour for water from a solar-powered irrigation pump, whereas they used to pay USD 1.48/hour from a diesel pump (prices in mid-2016). This is also the most appropriate model for small and marginal farmers who can benefit from solar-powered irrigation pumps without having to invest in the technology.

Are solar-powered irrigation systems a trend?

There seems to be a general trend towards suppliers planning and designing the entire solar-powered irrigation system (including pump and irrigation equipment), installing it and offering service contracts for its operation.

Can solar-powered irrigation work in Malawi?

In Malawi, over 500 hectares of farm land are expected to benefit from solar-powered irrigation through a government programme, funded by the African Development Bank (Kazembe, 2015). The private sector is

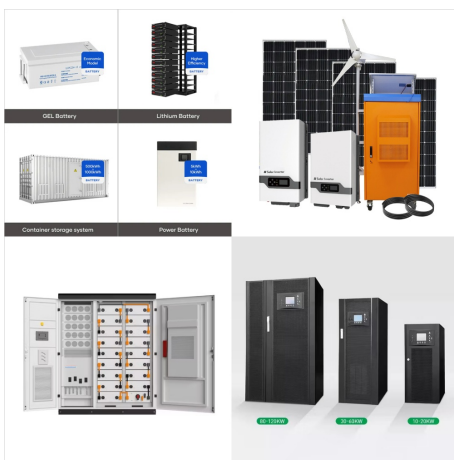
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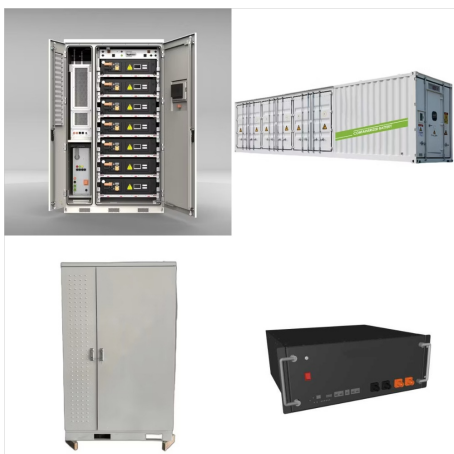
showing a keen interest with several local enterprises developing, marketing and retailing solar pumping solutions.



SolAqua's primary goal was to facilitate the adoption of SI, a technology that combines photovoltaic and hydraulic systems to deliver zero-emission energy for crop irrigation. This innovation not only significantly ???



Therefore, renewable energy options, particularly solar power, are a promising solution for sustainable agriculture in regions with high-solar-insolation. In principle, the operation of solar water pumping systems is limited to peak sunshine hours which has a high impact on the sustainability of water resources, i.e. groundwater aquifers and



Despite their relative novelty, solar-powered irrigation systems (SPIS) have earned a reputation for contributing to multiple Sustainable Development Goals (SDGs) as a single technology. Pumping water irrigating fields by harnessing the sun's power seems like a viable contribution

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A complete range of wireless, solar powered monitoring systems under the METOS(R) brand, and an online platform FieldClimate are applicable in all climate zones and can be used in various industries and for various purposes ??? from agriculture to smart cities, research, hydrology, meteorology, flood warning and more.



In a solar-powered irrigation systems (SPIS), electricity is generated by solar photovoltaic (PV) panels and used to operate pumps for the abstraction, lifting and/or distribution of irrigation water. SPIS can be applied in a wide range of scales, from individual or community vegetable gardens to large irrigation schemes.

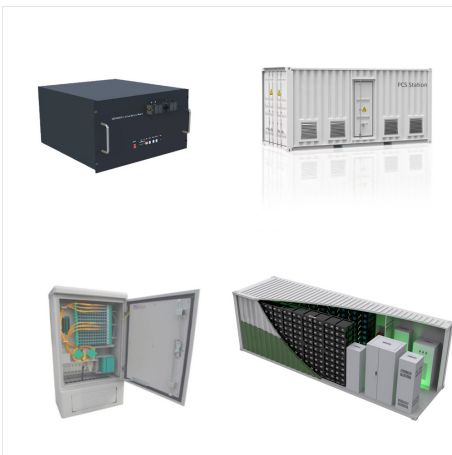


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Solar pumping for irrigation: Improving livelihoods and sustainability 5 Solar-based solutions can provide reliable, cost-effective and environmentally sustainable energy for decentralised irrigation services in a growing number of settings. When deployed, the benefits include improved livelihoods (increased productivity and



Just a few months ago, a mobile solar drip irrigation system from Austria has reached the production stage. The Austrian company Wien Energie carried out this project which pursues a dual objective: on the one hand, reduction of CO₂ emissions owing to the use of solar energy, on the other hand, achievement of 30% water savings thanks to the

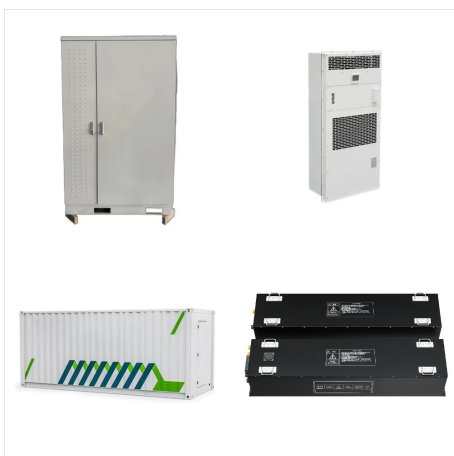
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SolAqua's primary goal was to facilitate the adoption of SI, a technology that combines photovoltaic and hydraulic systems to deliver zero-emission energy for crop irrigation. This innovation not only significantly reduces environmental impact but also offers a ???



Solar-powered irrigation systems (SPIS) are increasingly in demand in developing countries as they can provide a cost-effective and "clean" solution to increase agricultural productivity. Access to water for irrigation is key to farmers, particularly ???



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