



FTMRS SOLAR

Solar container outdoor power for farmland irrigation





Overview

Can solar-powered irrigation be used in agriculture?

In the agricultural sector, solar-powered irrigation can be particularly successful to overcome the frequently occurring energy shortages causing disruption of supply needed for lifting and distributing irrigation water. Challenges, however, remain in the monitoring and governance of abstraction through water pumping systems.

What is a solar-powered pumping irrigation system?

A solar-powered pumping irrigation system utilizes solar photovoltaic (PV) technology to convert solar energy into electrical power, which drives pumps for water lifting and irrigation. This system does not rely on fossil fuels and avoids environmental pollution.

Can a solar-powered irrigation system be used to renovate a traditional irrigation system?

This paper presents a methodology for designing a solar-powered irrigation system and demonstrates its practical application in the renovation of a traditional irrigation system at a demonstration farmland. The system design begins by calculating the required water flow rate for the pump based on the farm's crop irrigation needs.

What are the components of a solar-powered irrigation system?

A typical solar-powered pumping irrigation system comprises several components, including PV modules, controllers, inverters, electric motors, water pumps, storage tanks, pipelines, etc. The system's working principle is depicted in Fig. 1.



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