

Can solar water pumps be used for irrigation in Sudan?

Currently, there are many projects aiming at implementing solar water pumping systems in Sudan such as Solar for Agriculture; an ongoing project that aims at promoting the use of solar water pumps for irrigation in Sudan, by targeting 1468 solar pumps in the Northern state, the project expected to be concluded in the year 2021 [6].

Can solar water pumps be used for irrigation?

1.2. The Solar Powered Pumping Systems for Irrigation Project's intended goal is to use solar water pumps for irrigation to replace either diesel-generated electricity or grid based electricity generation for water pumping for irrigation. The replacement of the diesel pumps is going to generate certain climate related impacts.

Who carries out agricultural and power projects in Sudan?

6.1. The main stakeholders involved in carrying out agricultural and power projects in Sudan are: The Ministry of Water Resources Irrigation and Electricity (MWRIE) is the Government body responsible for Water Resources development and electric power generation and distribution in Sudan and is considered as the client for this project.

What are the main features of solar powered pumping systems for irrigation?

Some of the main features of the solar powered pumping Systems for Irrigation are: The project is environmentally classified under category 2 considering the nature of the interventions, which are expected to generate evident positive environmental and social impacts.

What is the solar energy potential of Sudan?

The African Development Bank (AFDB) has another project in the west and north Kordofan states. Sudan possesses a relatively high amount of solar energy, the annual global horizontal irradiation (GHI) varies between 2118-2483 kWh/m²/year [7]. Sudan photovoltaic electricity potential is shown in Fig. 1.

How much water does irrigation use in Sub-Saharan Africa?

In sub-Saharan Africa, approximately 78% of large- and small-scale irrigation schemes use surface water, while 20% make use of groundwater resources [2].

This project addresses the need for efficient and adequate energy provision for irrigation in Sudan by facilitating the replacement of diesel-powered pumping systems with ...

In the field of Agriculture, the importance of automatic irrigation control system cannot be overemphasized. The project presents the design and implementation of "Solar Powered Automatic ...

Sprinkler Irrigation System. Sprinkler irrigation system is a type of irrigation that imitates natural rainfall. It is



Sudan Solar Sprinkler Irrigation System

a system comprising of a sprinkler-nozzle combination as main system components; devices that achieve an equal circular distribution pattern of water under a particular radius around its installation position.

This paper is intended to investigate the most cost-effective solar water pumping system for irrigation in Sudan. Three solar irrigation pumps were considered based on the ...

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The two main types of solar irrigation systems are solar drip irrigation and solar micro-sprinkler systems. Solar drip irrigation systems deliver water directly to the roots of plants through a network of tubes and emitters. This method is highly efficient and reduces water wastage. On the other hand, solar micro-sprinkler systems spray water ...

The irrigation solar water pump system is a technological innovation using water pumps that are more efficient and economical. The aims of this study are: (1) to design an efficient solar pump ...

output. Results have shown that implementing Photovoltaic systems for agricultural irrigation is more profitable when compared to diesel systems. The costs of ...

Hose End Timers DIG's line of hose end timers offers a convenient way to automate a drip or sprinkler irrigation system from a faucet (hose bib) or garden hose. DIG's hose end timers offer programming flexibility for a wide range of applications and use solar power or batteries to operate, providing a unique and environmentally friendly ...

Download CAD block in DWG. Development of the solar system for pumping drinking water for the irrigation system. cuts and details with dimensions are presented. (207.57 KB)

This Training Manual summarizes the methods of developing ground water resources for irrigation and the use of pumps. It presents the planning, design, development, operations and maintenance of ...

The study aimed to evaluate the performance of center pivot irrigation systems in River Nile state, Sudan. Four locations were selected randomly to represent the using of center pivot irrigation ...

In 2019 the Engineering team at RPS released two new solar pump systems perfect for irrigation. You now have the ability to "off-grid" any existing AC well or Jet pump with the RPS WaterSecure(TM) system or replace your Booster or Shallow Well Jet pump with the adjustable Tankless Pressure(TM) system. Gallons Per Day (GPD) for Non-Well Pumps

Solar-powered water pumps overcome the issue of energy scarcity by powering irrigation without tapping into fossil fuels. This mechanism helps farmers by providing a fuel source for irrigation that is both stable and ...



Sudan Solar Sprinkler Irrigation System

The Republic of Sudan has received a grant from the African Development Bank Group to finance the SOLAR (PV) POWERED PUMPING FOR IRRIGATION (DESERT-TO ...

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Key Benefits of the Floppy Sprinkler Irrigation System. The floppy sprinkler is an overhead type irrigation system efficient on the usage of water and distributes water across uneven fields. This system can be installed on any terrain and will still distribute water evenly.

This way, irrigation water is channeled to particular block under high pressure. ii. If it is by gravity flow, then by raising the storage elevation. This will work where raised water tanks are the source of irrigation water. iii. By introducing an external source of pressure, such a s water pump to boost the flow of irrigation water in the system

How Solar Powered Micro-Sprinkler Irrigation Systems Work Solar Panels a Farmer can Use with a Micro-Sprinkler Irrigation System. Choosing the right type of solar panel is crucial for the efficiency and longevity of your micro-sprinkler irrigation system. Different types of solar panels offer various benefits, and the best choice depends on ...

Solar powered small-scale irrigation system. COOPI, in collaboration with Sudanese Environmental Conservation Society, implemented the irrigation systems, by installing three irrigation water pumping sets, consisting of ...

Learn to install a solar-powered drip irrigation system with valves, multiple zones, various drip emitters, and more. Video included! ... and chose the 25 PSI option since we also have gravity working in our favor in this system. Multi-strand irrigation or sprinkler wire, with enough wires for every station in your system - plus one. For ...

These advantages highlight the benefits of using a solar irrigation system on a farm, emphasizing sustainability, cost-effectiveness, and independence from traditional energy sources. **Cost-Cutting: Solar Savings Over Traditional Methods.** Solar irrigation systems can lead to major cost savings over time. While the initial investment might be ...



Sudan Solar Sprinkler Irrigation System

The proposed Project aims to develop and accelerate the adoption of off-grid solar PV powered pumping systems in irrigation in farmlands by replacing the diesel-based water ...

The Floppy sprinkler is installed on an Overhead Cable System or a Riser system. Innovative installation methods solve many problems in small and large Agriculture projects. For other industries such as Solar panel cleaning and Fire protection, the sprinkler is connected directly to the poly pipe and mounted on the roof or structure.

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