

Can solar pumping technology be used for drip irrigation?

In this study, the application of solar pumping technology to drip irrigation has been examined. The case study of the Jordan Valley is chosen as means to compare solar pumping cost effectiveness to conventional pumping systems currently used by farmers, namely grid-electricity and diesel pump-ing systems, using the real world data.

Is PV-battery a viable alternative to grid electricity in Jordan?

For current subsidized grid electricity retail price to farmers, the PV-battery system becomes more attractive above a 300 m distance from the grid, while if the actual cost of electricity production in Jordan is taken into account, then it breaks even to 128 m.

How much water does a drip irrigation system use?

Based on the data above, the drip irrigation system is fed by a 4.3 kW electric pump that annually pumps 28,071 m³ of water and consumes 6,063 kWh EL. In order to calculate the Net Present Cost (NPC) of the system over a period of 20 years, the parameters shown in Table 2 were considered.

How does drip irrigation work in Deir Alla?

In this paper, drip irrigation of a typical 3 × 104 m² (300 m × 100 m) date palm plantation in Deir Alla in the Jordan Valley has been examined. Water is pumped from a water pond to the plantation. Spacing within and between tree rows is 10 m, resulting in 30 tree rows and 300 trees in total.

Many Arab countries, including Jordan, intend to benefit from solar energy in various applications for electricity generation.

Keywords: photovoltaic (PV), Solar energy, water pumping system, Jordan, Irrigation. ©The Author(s). This is an open access article distributed under the terms of the Creative Commons ...

Solar-powered drip irrigation systems are an innovative solution that combines two efficient technologies: solar power and drip irrigation. Solar ...

In Jordan and Lebanon, the widespread use of inefficient irrigation methods results in the waste of large amounts of water. This wasted water could be used for wider and better irrigation of crops.

The country's reliance on traditional irrigation methods often leads to inefficient water usage, exacerbating water scarcity issues. By integrating solar power into irrigation systems, Jordan ...

6Wresearch actively monitors the Jordan Solar Powered Irrigation System Market and publishes its

comprehensive annual report, highlighting emerging trends, growth drivers, revenue ...

In this study, an algorithm has been developed that manages photovoltaic solar energy in such a manner that all generated power is delivered to the system formed by a ...

This paper shows the achievability of utilizing photovoltaic (PV) modules to power water pumps in an assigned irrigation system in the Mafraq desert, Jordan. The irrigation ...

Designed and implemented by the National Energy Research Centre at the Royal Scientific Society, this project involved the replacement of inefficient electrical and diesel irrigation ...

A study by Israel University researchers explores the feasibility of using hybrid solar and wind energy to power a water pumping system in the Jordanian desert.

Solar-powered irrigation systems harness the power of the sun to pump water, reducing reliance on ...

Irrigation plays a vital role in modern agriculture, ensuring optimal crop growth and efficient water usage. However, traditional irrigation methods often lack automation and require ...

This article compares the Present Value Cost (PVC) for the monetary estimation of energy supply for water pumping systems (WPSs) in remote areas in Ghor Al-Safi/Jordan by two different ...

The paper presents the feasibility of photovoltaic water pumping system (PVWPS) to determine its suitability for irrigation purpose in Saudi Arabia. T...

Abstract In locations where electricity is unavailable, other means are necessary to pump water for consumption. One option is a photovoltaic (PV) pumping system. Advantages of PV ...

Foreword The Bureau of Agriculture and Fisheries Standards (BAFS) was directed to prioritize the development of the Philippine National Standards (PNS) on Solar Powered Irrigation System ...

In this paper, these alternatives are assessed technically and eco-nomically under real world conditions through the Jordan Valley case study.

Photovoltaic water pumping system (PVPS) is an important and promising application of solar energy systems especially in remote areas.

The present research investigates the feasibility of an HRES based on two different RE sources: solar PV, wind, and conventional DG to power a WPS in an isolated desert rural ...

Researchers at the Israel University in Jordan have studied the feasibility of a water pumping system powered by solar and wind energy. In the Jordanian desert, limited surface ...

Solar irrigation is a climate mitigation technology to reduce greenhouse gas (GHG) emissions in agricultural production. Despite its ...

Designed and implemented by the National Energy Research Centre at the Royal Scientific Society, this project involved the replacement of inefficient electrical ...

Choosing the right solar water pumping system requires knowledge of the actual site including solar radiation, amount of water to pump every day, and the total dynamic head.

In the agricultural sector, solar-powered irrigation can be particularly successful to overcome the frequently occurring energy shortages causing disruption of ...

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Jordan Solar Photovoltaic Irrigation System Recommendation

