

# Senegal Solar Water Pump Inverter Agricultural Irrigation



## Overview

Solar-powered water pumps are enabling farmers in Senegal to irrigate their crops year round which, in turn, has seen trade pick up. The farmers till their land in the shadow of the Taiba N'Diaye wind farm, the largest such power station in West Africa by generation capacity. 5kW PKCT solar water pumping system from Solartech is transforming agriculture Before installation, farmers struggled with unstable grid power and seasonal water shortages. Now, the PKCT solar pumping system, equipped with hybrid grid/solar input and automatic switching. Dakar, Sénégal, June 27, 2024 – As part of efforts to achieve food security and strengthen farmers' resilience to the impact of climate change, the Global Green Growth Institute (GGGI) and the Government of Senegal have inaugurated the first of 12 solar-powered irrigation units that will be. In Senegal, 78% of vegetable farms still use gravity irrigation or manual sprinkling. Consequence: over-irrigation 40-65%, water losses 35-55%, accumulated salts, progressive yield decline. IoT solar irrigation solution tested on 11 Kolonell farms between January 2025 and April 2026: water savings. to analyze energy interventions in the agrifood sector<sup>1</sup>. The main purpose of the methodology is to assess costs and benefits associated with renewable energy and energy efficiency practices and to highlight hidden socio-economic and environmental costs and benefits of such interventions.



## Article Content

Senegal Ministry of Agriculture and GGGI inaugurates

Part of the facilities inaugurated include solar-powered irrigation pumps that will operate at 100% solar during the day, with a capacity of 47kw-peak, and have

Senegal: Renewable Energy in Agricultural Value-Chains

**SITUATION DESCRIPTION** The case study evaluates the costs and benefits of using In Senegal, irrigation systems for solar PV powered water pumping for irrigation at a small- small private farm

Senegal IoT solar irrigation: sensors + automation (2026) | Kolonell

Senegal IoT solar irrigation 2026 architecture: moisture / EC sensors, Lorentz / Sunculture / Futurepump pump, LoRa, 30-50% water savings, 2-3 year ROI, complete diagram.

Senegal Farmers Flourish with Solar Irrigation

In Senegal, a remarkable transformation is underway as farmers harness the power of solar energy to irrigate their crops throughout the year, a development that has revitalized trade and

Results-based financing lets farmers in Senegal buy solar-powered water ...

After almost 40 farmers bought solar pumps through the results-based financing approach used by Germany's initiative for Green People's Energy, they reported almost 100% increases in

Costs and benefits of solar irrigation systems in Senegal

In this paper, the INVESTA methodology is applied to identify the real costs and benefits of solar irrigation systems in two international cooperation projects in Senegal. For more information on the

Senegal: Solar irrigation are transforming farmers' lives

Solar-powered water pumps are enabling farmers in Senegal to irrigate their crops year round which, in turn, has seen trade pick up. The farmers

Solar Water Pump System for Agricultural Irrigation

The solar water pump is not like the pump powered by the conventional AC grid. Because the electricity generated by the photovoltaic

Senegal: Solar irrigation are transforming farmers' lives

General depiction of agricultural equipment for irrigation powered by solar energy. Image credit: [tofansingh ]©123RF Solar-powered water

Solartech SPMD provides water for small farmers in Senegal

It is suitable for pumping water from low head water sources such as shallow wells, ditches, streams and ponds to meet the needs of domestic water supply, livestock breeding and vegetable garden

Solar Powered Irrigation Success in Senegal

At Nguekhokhe, Senegal, the 5.5kW PKCT solar water pumping system from Solartech is transforming agriculture. Before installation, farmers struggled with unstable grid power and seasonal

Study of the Impact of Solar Pumping Solutions on Agricultural ...

Solar water pumping systems are composed of three principal components: the hydraulic pump, the inverter, and the solar panels. Nadji.Bi Senegal provides farmers with three system

Upscaling solar-powered irrigation solutions in Senegal

InfraCo Africa and Bonergie Irrigation have signed new agreements to continue working with each other to scale up access to solar-powered

Senegal: Renewable Energy in Agricultural Value Chains

Senegal: Renewable Energy in Agricultural Value Chains Model Business Case: Solar Photovoltaic Water Pumping for Large-Scale Irrigation Scheme with High Water Demand INTRODUCTION

Solartech Solar Pumping System Supports 20 Hectare

In Bockel, Matam Region, sunlight not only nourishes crops but also powers irrigation through Solartech solar pumping system. This project showcases

Senegal: Renewable Energy in Agricultural Value-Chains

SITUATION DESCRIPTION The project case study assesses the potential financial The melons are watered using a viability of solar PV powered water pumping for irrigation centre-pivot (also known as

JIVO Energy Solarizes Irrigation Water Pumps To Support Rice

JIVO Energy has completed the solarization of five water pumping systems used for irrigation in northern Senegal, marking an important step toward sustainable agriculture in the region.

Solar Powered Water Lifting For Irrigation

Agriculture irrigation systems require constant water supply with daily operation times of up to 16 hr/day where Solar operation hours lies 6-8 hr. In order to compensate for this divergence, solar pumps are

## Senegal: Renewable Energy in Agricultural Value-Chains

**SITUATION DESCRIPTION** The case study assesses the potential financial viability of For the case study, it is assumed solar PV powered water pumping for irrigation at a small the group irrigation

### Costs and benefits of solar irrigation systems in Senegal

In recent years, several experts (engineers, environmental supporters, government experts, agronomist technician, etc) are pushing for the installation of electric pumps fed by solar energy and modern

### Study of the Impact of Solar Pumping Solutions on Agricultural ...

This paper seeks to identify the causal impact of solar water pumps on the consumption of water, electricity and diesel as well as the gross cropped area under fruits and vegetables and...

### GGGI Technical Report No.39 Solar Powered Irrigation Systems

This report evaluates the recognized and demonstrated impact of CSA practices on yields. It also examines the productivity of key agricultural crop value chains and showcases an approach to locally

### How Can a Solar Pump Inverter Transform Agricultural Irrigation ...

Discover how a solar pump inverter improves irrigation efficiency, reduces energy costs, and supports sustainable farming. Learn why KUVU's KV100A & KV90PV series are trusted

### Technical and Economic Feasibility of Solar Pump Irrigation in the ...

Regarding technical feasibility, pump sizing was carried out on the basis of irrigation management, irrigation techniques, and water distribution.

### Senegal Farmers Flourish with Solar Irrigation

In Senegal, solar-powered water pumps and wind energy are transforming agriculture, enabling farmers to irrigate crops year-round, boosting trade, and ushering in a sustainable

### Solar irrigation in Senegal: costs and benefits

In recent years, experts, including engineers, agronomists and civil servants have been pushing for the installation of electric pumps fed by solar

### Study of the Impact of Solar Pumping Solutions on Agricultural ...

The findings demonstrate the beneficial impact of solar pumping solutions on the environment, agricultural productivity, and economic viability in the Niayes region.

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