

# Solar System Solar Irrigation: Powering Agriculture with Renewable Energy

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## Why Are Traditional Irrigation Methods Failing Farmers?

Farmers worldwide face a crushing dilemma: 30% of operational costs go to fuel-based irrigation while 500 million acres remain unirrigated globally. What if solar irrigation systems could slash energy expenses by 60% while reaching remote fields? In drought-prone regions like sub-Saharan Africa, diesel pumps cost \$0.30/kWh versus solar's \$0.05/kWh - a 6x cost difference that determines survival for smallholder farms.

## The Solar Irrigation Revolution

Modern solar-powered irrigation combines photovoltaic panels, efficient pumps, and smart controllers. A typical 5HP system covers 10 acres daily, storing excess energy in batteries for nocturnal use or cloudy days. India's PM-KUSUM scheme deployed 350,000 solar pumps since 2019, reducing diesel consumption by 1.2 billion liters annually.

## How Solar Irrigation Systems Outperform Conventional Solutions

- 45% lower lifetime costs compared to diesel/grid systems
- 25-year panel lifespan with

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