What is solar powered water pump history in ghana

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While these steam pumps gained some traction through the 19th and 20th centuries, a parallel line of invention was occurring – that of solar photovoltaics (PV), using solar to directly generate electricity.

A significant breakthrough in the semiconductor industry in the 1970s kick-started an exciting trend which has continued into today: an increase in panel efficiency (more power per square metre) and a rapid decrease in cost.

Nowadays most solar pumps are powered by solar PV panels and the technology continues to improve so that more powerful pumps can be powered by smaller, cheaper solar panels. No longer as solar panels only for the rich.

As panels become cheaper and increasingly portable, solar water pumps are just as versatile as water pumps powered by fossil fuels and in some cases more so. They are ideal for delivering water to remote locations where power lines cannot reach, do not require expensive and polluting fuel and are not labour intensive.

Now is a really good time for solar water pumps as technologies have been rapidly improving, becoming more efficient and cheaper. It is now easier than ever to find a solar water pump solution for your needs.

If you are not familiar with using solar to power a water pump for irrigation, it is likely that you will need to make some changes to your daily farming activities. Once you get into a routine with solar power, these changes can be used to your advantage.

Moving from rain-fed agriculture to a solar powered water pump will increase your farm"s resilience to changing weather patterns, droughts, and seasons. Irrigating through drier periods of the year means that you will have longer growing seasons, and sometimes even grow an extra harvest, depending on the climate where you are.

If you have a reliable electric connection in your field, then the benefits of solar over electric are not so clear. However most farms do not have this luxury. Installing a grid connection can be expensive and also limits where you can place your pump. Solar pumps, especially with portable panels, give more flexibility to irrigation and will have zero fuel costs.

The amount of solar energy that hits the Earth in a single hour is more than our energy requirement for the whole year. It does make a lot of sense to use this resource, especially for irrigation as it is in abundance when your crops need irrigation the most – during hot, dry, and sunny weather.

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A surface water pump is placed on the ground surface near the water source. It sucks water up into the pump (suction lift) and then pushes it up or along to where the water is needed (discharge lift). The suction lift, plus discharge lift equates to the total lift – this is the "lift" amount that is commonly referred to on datasheets and websites.

A submersible pump must be fully submerged to pump water. These pumps are often found in deep wells and boreholes (below the suction depth limit of a surface pump), pushing water up to where it is needed. As they are only pushing water they do not have a suction lift.

Choosing between a surface solar pump and a submersible should be quite an easy task. If your water source is suitable for a surface pump (up to 7m suction depth), then this is the option for you as they are optimised for surface pumping and you will likely benefit from higher flow rates than using a submersible. If your water is lower than 7m below the surface, look at submersibles.

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