Solar Water Pump Market Assessment, By Type [Submersible Solar Water Pumps, Surface Solar Water Pumps, Others], By Mode of Operation [DC Pump, AC Pump], By Power Rating [Up to 5 HP, 5 HP to 10 HP, >10 HP to 20 HP, >20 HP], By Application [Drinking Water Supply, Irrigation, Livestock Watering, Wastewater Treatment, Others], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Global solar water pump market is projected to witness a CAGR of 10.1% during the forecast period 2024-2031, growing from USD 4.51 billion in 2023 to USD 9.74 billion in 2031. Solar pumps help farmers reduce their reliance on diesel-powered pumps, saving costs, and reducing greenhouse gas emissions. The increasing demand for sustainable and energy-efficient water pumping solutions, the need for sustainable water management, and government initiatives to promote solar energy installations are driving the market growth. Financial incentives, decreasing cost of solar panels, and rising electricity prices are the key drivers of the market. The increasing demand for sustainable and energy-efficient water pumping solutions influences the growth of the solar pump market. Technological advancements in solar-powered water pumps, such as advanced monitoring systems and remote control features, facilitate efficient water management, ensuring optimized water usage and improved productivity. Additionally, solar water pumps provide high efficiency, operate directly from solar power, and offer an eco-friendly and efficient alternative to traditional grid-powered pumps, thereby leading to more water conservation and reduced carbon emissions.
For instance, in March 2023, the World Bank reported that solar-powered irrigation pumps had been introduced in Niger, West Africa, to increase yields in food-insecure, arid areas. The pumps have enabled farmers to efficiently manage their crops, cutting costs on fuel and providing a practical solution to limited water access and the rising costs of fuel for irrigation. The HortiNigeria program has contributed to enhancing food and nutrition security across 10 local government areas in the country, farming crops such as cabbage, cucumber, okra, tomatoes, peppers, carrots, watermelon, and sweetcorn. The initiative has provided information to over 50,000 farmers regarding sustainable agriculture practices.

Rural Electrification is Primarily Driving the Market Growth at an Extensive Rate

Rural electrification is driving the growth of solar water pumps, especially in areas with limited access to grid electricity. Solar-powered water pumps offer a sustainable and cost-effective solution for providing water to the crops in rural areas. These pumps have played a pivotal role in enhancing agricultural productivity, leading to higher crop yields and better livelihoods.

For instance, in February 2024, the implementation of a solar water system on Tanna Island has brought immense joy to the residents of Isangel and Blackman Town. This sustainable initiative has provided the communities with access to clean water and is responsible for its transformative impact, symbolizing a new era of prosperity for the region. Supported by the Grand Duchy of Luxembourg and executed by the Global Green Growth Institute (GGGI), this initiative introduces a modern water system with the aim of delivering reliable water access to 700 households in these rural communities. Moreover, the endeavor is a component of the "Scaling up Climate Resilience through Solar Power-Driven Access to Water" program.

Rise in Need for Livestock Watering is Influencing the Market Growth Extensively

The rise in the need for livestock watering is driving the growth of solar water pumps. These pumps offer a sustainable and cost-effective solution for providing water to livestock in areas without access to grid electricity. Moreover, the declining costs of solar panels and government initiatives promoting renewable energy have led to increased adoption of solar-powered water pumps in various sectors, including livestock watering.

For example, in October 2023, Switzerland based Ennos Ag introduced solar water pumping for a Patagonian cattle rancher. The sunlight pump is moving water 6 kilometers away to water dispensers, so that sheep herds can drink water, without the need to walk long distances. The highly efficient solar technology of the sunlight pump is capable of pumping water from several kilometers away, even in areas with low solar radiation. The installation was carried out by Ennos Ag's new distributor/installer in Heliplast, Chile.

Government Initiatives

Government initiatives play a crucial role in promoting the adoption of solar water pumps globally. These initiatives include incentives, subsidies, and policies that encourage the use of renewable energy, particularly in agriculture, water supply, and rural areas. Governments and organizations are providing policy frameworks and financial support to facilitate the widespread deployment of solar-powered water pumps, aiming to improve water access, enhance agricultural productivity, and uplift livelihoods. Subsidies and funding programs are being implemented to encourage the transition to sustainable water pumping solutions, reducing reliance on traditional fuel-based systems, and mitigating environmental impact.

For example, in India, the Uttar Pradesh government aimed to deploy over 30,000 solar irrigation pumps under the PM KUSUM Scheme, with both state and central governments providing financial support. The initiative offers farmers subsidies for installing standalone solar pumps for solarizing grid-connected pumps, promoting eco-friendly and affordable solar-powered irrigation. The government's efforts seek to enhance clean energy-based irrigation, reduce carbon emissions, and lower irrigation costs, benefiting farmers across 75 districts in the state.

Implementation of Solar Pump for Drinking Water Supply

Implementing solar pumps for drinking water supply involves using solar energy to power water pumps, providing a sustainable and cost-effective solution for remote or off-grid areas. Solar pumps can draw water from wells, boreholes, or reservoirs, and the use of solar power reduces operating costs and environmental impact. This approach helps ensure reliable access to clean water, particularly in areas with limited electricity infrastructure.

For instance, in February 2023, the India-UN Fund-supported initiative to provide safe drinking water to 40,000 people, over half of which were women and girls in rural areas of Aquin and Baconnois of Haiti, by installing 8 solar photovoltaic-based water pumping systems to reduce greenhouse gas emissions (GHG). Additionally, more than 20 individuals in these communities received vocational training on operating and maintaining the systems, promoting sustainable water access, and empowering the local population, particularly women and girls.

Asia-Pacific Continues to Dominate Solar Water Pump Market

Asia-Pacific has taken the lead in the solar water pumps market due to several key factors. Government initiatives, including incentives, subsidies, and policies promoting renewable energy adoption, especially in agriculture, drive the region's growth of solar water pumps. Moreover, Asia-Pacific reflected the increasing demand for clean and sustainable water solutions, rapid urbanization, and decreasing solar panel costs. These factors have collectively positioned the Asia-Pacific as a frontrunner in the

solar water pumps market, demonstrating a strong commitment to sustainable and environmentally friendly water solutions.
For instance, in April 2023, the state government of Goa, India, announced the installation of 200 solar water pumps across the state to help farmers reduce their electricity costs. The initiative is part of the PM KUSUM scheme, which aims to promote eco-friendly and affordable solar-powered irrigation. The government plans to provide 100% subsidy for purchasing solar pumps to encourage farmers to adopt solar-powered irrigation, thereby reducing carbon emissions and irrigation costs.
Future Market Scenario (2024 - 2031F)
-The solar-powered water pumps market is experiencing significant growth due to increasing demand for sustainable and environmentally friendly solutions in agriculture, water supply, and other sectors, which in turn is expected to lead to extensive opportunities for market growth in future.
-The 5 HP - 10 HP solar water pumps market is set to surpass USD 1 billion by 2032, driven by favourable norms and a shift towards sustainable water resource management, thereby catering to growth opportunities for the market.
-Solar water pumps offer high efficiency and the ability to operate directly from the sunlight, making them a compelling choice for various applications such as irrigation, livestock watering, and domestic water supply, anticipated to cater to myriad possibilities of market growth in future generations.
-Moreover, the pivotal market players are spending towards the technological advancements of the solar water pumps thereby enhancing the opportunities for market prosperity in future.
Key Players Landscape and Outlook
Key market participants prioritize technological advancements and strategic partnerships to enhance their market position globally, driven by the industry's steady growth and increasing competition. In September 2023, Mumbai-based Crompton Greaves Consumer Electricals Limited secured a whooping USD 3.06 million order from Haryana government for solar pumps under the PM Kusum Scheme. The order aims to promote the adoption of solar pumps for agricultural irrigation, reducing carbon emissions and fuel costs.
In April 2023, Xylem and BERNT LORENTZ GMBH partnered to expand the availability of solar-powered pumping systems globally. The partnership aimed to revolutionize water management worldwide with sustainable solar-powered pumping solutions. The companies planned to develop new Xylem products, and BERNT LORENTZ GMBH would supply Xylem with solar-powered and solar/grid hybrid pumping systems, which, in turn, will greatly reduce the operating cost.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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