

Saudi Arabia Floating Photovoltaics Market Assessment, By Product [Stationary Floating Solar Panels, Solar-tracking Floating Solar Panels], By System [Stand Alone FPV Systems, Hybrid FPV Hydropower Systems], By Application [Man-made Water Bodies, Natural Water Bodies], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Saudi Arabia floating photovoltaics market is projected to witness a CAGR of 12.20% during the forecast period 2024-2031, growing from USD 49.85 million in 2023 to USD 125.20 million in 2031. The market has experienced significant growth in recent years and is expected to maintain a strong pace of expansion in the forecast years due to favorable policies and higher investment.

The floating photovoltaics technology has gained traction due to technology boosts and renewable energy generation. FPV technology offers different environmental, economic, and social benefits, which is why it is considered one of the most important and versatile solutions in the renewable energy landscape. The system displays the efficient use of water surfaces and the integration of floating photovoltaics technology with hydrogen energy production, fostering renewable energy production. Numerous benefits associated with the floating photovoltaics technology drive the growth of floating photovoltaics in the forecast years.

The floating photovoltaic system is a key contributor as technology boosts the production of renewable energy and resilience to climatic changes. Furthermore, government investments in research and development to improve the system's design and lower the cost of the PV modules drive the adoption of floating photovoltaic technology.

For instance, in August 2024, PT PLN, an Indonesian company, partnered with a Saudi Arabian company to build a 60-MW floating solar power plant at Saguling Reservoir in West Java. The project epitomizes the key steps toward renewable energy collaboration between the two nations.

Abundant Water Bodies Suitable for Floating Photovoltaics

Water bodies such as lakes, reservoirs, and ponds are less productive. Installation of floating photovoltaics systems on the surface

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of water bodies is an effective way to make productive use of the place without affecting the primary function of the body. Several countries endowed with the presence of water bodies are coming out with ambitious renewable energy targets for sustainability and climate action plans. Floating photovoltaics technology is a viable solution that supports the targets through the utilization of available water surfaces for solar energy generation.

Moreover, FPV systems can be installed on various kinds of water bodies, both natural and artificial. A floating photovoltaics system is a dual solution which promotes renewable energy generation and lowers the evaporation rate. The modular nature of FPV systems allows for easy scalability. Additional solar panels could be installed as needed on floating photovoltaics plant sites which creates the possibility to increase capacity without extensive modifications or land acquisition. Floating photovoltaics systems can create hybrid systems with other renewable energy sources, such as wind or hydropower which increase energy resilience and stability.

Maintaining Energy Security and Diversification to Drive Market Demand

In the current scenario, the demand for energy is on the rise. Developing countries are looking for ways to diversify the energy mix as a part of energy diversification strategy. Floating photovoltaics technology is becoming a part of diversifying the energy production strategy. The technology will reduce the carbon footprint, dependency on fossil fuel, and enhance energy security in the forecast years. Minimizing the reliance on a sole source of energy, utility providers are adopting floating photovoltaics technology for the expansion of renewable energy portfolio.

Floating photovoltaic technology promotes clean and renewable energy sources, reducing the emission of greenhouse gases. Floating photovoltaic plants withstand climate change, adapt to environmental and sustainability imperatives in energy production. The technology allows for the harnessing solar energy sources without the acquisition of land. The floating photovoltaics systems could be combined with other renewable sources, such as wind and hydropower, which creates a diversified portfolio of energy.

Moreover, the installation of floating photovoltaic panels on existing hydropower reservoirs is easy. The hybrid infrastructure is leveraged in the production of solar power without the loss of the hydropower capability. The hybrid approach allows for full usage of water resources by providing a power production and balance out the intermittency of solar energy. Diversification of energy production sources increases grid stability and reduces the risks associated with dependence on one energy source, which fosters the floating photovoltaics market size in the forecasted period.

For instance, Saudi Arabia established renewable energy targets to diversify the energy mix and reduce dependence on oil in Saudi Arabia's Vision 2030 plan. The floating photovoltaics (FPV) technology aligns with the goal of offering an innovative solar energy solution that can be rapidly deployed.

Government Initiatives and Policies to Drive the Market Growth

Government initiatives and policies create an enabling environment for adopting and developing new energy technologies. The promotion steps provide financial incentives, regulatory frameworks, and strategic goals that encourage investment in floating photovoltaic technology.

The government is focusing on climate resilience, including adopting floating photovoltaics technology as part of energy production strategies. The government and higher authorities are providing grants and subsidies towards floating photovoltaics to reduce the capital cost of the FPV installations. Moreover, integrating floating photovoltaics into energy production strategies will likely encourage investments and partnerships from the public and private sectors. Governments facilitate partnerships between public and private entities for the development of projects pertaining to floating photovoltaics. The partnerships leverage funding from the government and expertise from the private sector, which would accelerate the growth of Saudi Arabia floating photovoltaics market in the forecast period.

For instance, in September 2023, the country's higher authorities announced the establishment of a global water organization that would help the country put more effort into solving water challenges. The organization will advocate for creating and financing high-priority projects to ensure the sustainability of water resources.

Stationary Floating Solar Panels to Dominate the Market Share

Stationary floating solar panels have a high adoption rate leading to the dominance of the segment in Saudi Arabia floating photovoltaics market share. Stationary floating solar panels can be installed with fewer engineering challenges compared to land-based systems which reduce initial installation costs. Additionally, maintenance of floating photovoltaics is easier due to the

accessible nature of the installations on water bodies. Stationary floating solar panels have been facilitated with monetary policy support which makes the product an economically feasible option for the developers and investors. Moreover, the government has been continuously encouraging the adoption of renewable energy technologies which foster the demand for stationary floating solar panels in the market. Several benefits offered by the stationary floating solar panels sustain their dominance in floating photovoltaics market.

Riyadh Leads the Floating Photovoltaics Market Share in Saudi Arabia

Floating photovoltaics market is expected to be dominated by region in the forecast years. Riyadh has benefits from high solar irradiance levels throughout the year due to which the location is ideal for solar energy projects. Scalability of floating photovoltaics systems in Riyadh is easy as abundant sunlight generates significant amounts of renewable energy. The region includes several water bodies consisting of major man-made reservoirs which are ideal for installing floating solar panels. Riyadh is committed to generate hydroelectric power which creates the opportunity for the floating photovoltaics market.

For instance, in July 2024, Alfajar projects company planned to open the solar PV power project of 110 MW in Eastern Province, Saudi Arabia. This development will promote the production of renewable energy in Saudi Arabia.

Future Market Scenario (2024 – 2031F)

□ Ongoing innovations in floating photovoltaics technology will improve the installation cost of the projects.

□ Saudi Arabia is actively looking to enter in the new ways of energy diversification and renewable energy sources will gain significance.

□ High production of renewable energy and lowering environmental impacts will make the system more energy efficient which will boost floating photovoltaics systems sales.

□ Supportive government policies and financial incentives related to renewable energy projects, including FPV, within Saudi Arabia will further help in floating photovoltaics market growth.

Key Players Landscape and Outlook

Continuous innovation characterizes the landscape of floating photovoltaics as the companies compete to gain solar projects, energy efficiency, and unique features. The market remains positive, owing to increased demand for renewable energy. The market players are concerned with supply chain resilience, energy efficiency, and environmental practices, which will define the industry's future. Collaborations and developing technologies are projected to increase competition in this fast-paced market. For instance, in 2022, ACWA Power Company signed a contract with PT Perusahaan Listrik Negara (Persero), or PLN, to develop two floating solar PV projects in Indonesia.

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