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Floating Solar and Water-Surface PV Market Forecasts to 2034 – Global Analysis By Component (Solar Modules, Floating Structures, Anchoring & Mooring Systems and Inverters & Electrical Equipment), Installation Type, Capacity, Technology, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Floating Solar and Water-Surface PV Market is accounted for $7.9 billion in 2026 and is expected to reach $8.9 billion by 2034 growing at a CAGR of 1.5% during the forecast period. Floating solar, also known as water-surface photovoltaic systems, involves placing solar panels on water bodies like lakes, reservoirs, and ponds to generate renewable energy. This approach saves valuable land space and enhances energy output because water helps keep the panels cool. It also minimizes water loss through evaporation and helps control algae formation, supporting better water conditions. As demand for clean energy rises worldwide, floating solar installations are expanding rapidly. Improvements in floating structures and anchoring methods have made these systems more dependable, efficient, and economical, positioning them as a promising and scalable solution in the global transition to sustainable power.

According to the International Renewable Energy Agency (IRENA), floating solar PV has emerged as a rapidly growing segment of the solar market, with global installed capacity surpassing 3 GW by 2023, driven largely by Asia-Pacific nations such as China, Japan, and South Korea.

Market Dynamics:

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Driver:

Efficient land utilization

The floating solar market is driven by its ability to overcome land limitations by deploying panels on water bodies like lakes and reservoirs. This reduces dependence on scarce and costly land resources, especially in densely populated or agriculturally intensive regions. By avoiding land acquisition challenges and minimizing ecological disruption, floating PV systems present a practical solution for expanding solar capacity. They allow energy generation without competing with other land uses, preserving natural habitats and farmland. Converting unused water surfaces into energy-generating zones supports sustainable infrastructure development while easing pressure on land resources and enabling broader renewable energy adoption.

Restraint:

High initial investment costs

The floating solar market faces challenges due to its high upfront expenses, driven by the need for specialized floating structures, anchoring systems, and durable materials suited for aquatic environments. Compared to land-based solar installations, these systems involve more complex engineering and installation processes, increasing overall costs. Additional expenditures for feasibility studies and waterbody preparation further add to the financial burden. This cost factor can discourage smaller developers and slow adoption in price-sensitive regions. Despite long-term efficiency benefits, the requirement for significant initial capital remains a major obstacle to the widespread deployment of floating PV systems globally.

Opportunity:

Untapped water bodies and large-scale projects

The availability of unused water bodies creates a strong opportunity for expanding floating solar systems on a large scale. Locations such as reservoirs, abandoned mining sites, irrigation ponds, and treatment plants offer ideal conditions for deployment. These sites enable significant energy generation without the need for additional land resources. Large installations can supply power to cities and industries, supporting growing energy demands. Improved site identification and feasibility analysis are further increasing project viability. This vast potential of underutilized water surfaces plays a

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crucial role in driving the global growth of floating solar and water-surface photovoltaic markets.

Threat:

Extreme weather and climate risks

Harsh weather conditions represent a major threat to floating solar systems, as installations are exposed to storms, high winds, and heavy rainfall. Such events can damage equipment, weaken anchoring systems, and interrupt energy production. With climate change intensifying these occurrences, the risk to floating PV projects is increasing. This leads to higher maintenance and repair expenses, which may impact financial returns. Developers are required to implement stronger and more resilient designs, raising overall project costs. These growing environmental risks create uncertainty and act as a significant barrier to the sustainable growth of the floating solar market.

Covid-19 Impact:

The outbreak of COVID-19 created both challenges and opportunities for the floating solar market. During the early stages, strict lockdown measures disrupted supply chains, reduced workforce availability, and postponed project execution, slowing market growth. Manufacturing and installation processes faced delays due to restrictions on movement and logistics. Despite these setbacks, the pandemic highlighted the need for sustainable and reliable energy solutions. Governments began emphasizing green recovery strategies, increasing support for renewable energy initiatives. As restrictions eased, postponed projects restarted, and investment activity improved, leading to a steady recovery of the floating solar and water-surface photovoltaic market.

The solar modules segment is expected to be the largest during the forecast period

The solar modules segment is expected to account for the largest market share during the forecast period because it serves as the primary element for producing electricity. These panels are crucial for converting solar energy into usable power, making them the most important and high-value component within the system. Improvements in efficiency, longevity, and affordability have enhanced their importance in recent years. The need for large quantities of modules in every installation further increases their overall share. Compared to other components, their direct role in energy generation ensures higher demand, positioning solar modules as the most significant segment in

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the floating solar and water-surface PV market.

The industrial power supply segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the industrial power supply segment is predicted to witness the highest growth rate, driven by rising energy needs across various industries. Companies are increasingly turning to floating solar solutions to cut operational costs and achieve sustainability targets. The presence of water bodies within industrial premises provides a practical advantage for deploying these systems. Furthermore, stricter environmental norms and the push to reduce carbon footprints are encouraging adoption. Generating renewable energy on-site while utilizing idle water surfaces makes this segment highly attractive, contributing to its strong and accelerating growth trajectory.

Region with largest share:

During the forecast period, the Asia-Pacific region is expected to hold the largest market share as a result of its increasing emphasis on clean energy and the abundance of water resources suitable for such installations. Rapid industrialization and growing power consumption are driving the need for alternative energy solutions. Limited land availability in densely populated areas makes floating solar an attractive option. Government support, favorable policies, and significant investments are accelerating project development across the region. Additionally, the presence of major industry players and ongoing innovation further enhances growth, solidifying Asia-Pacific's position as the leading market for floating solar systems.

Region with highest CAGR:

Over the forecast period, the Europe region is anticipated to exhibit the highest CAGR, driven by its ambitious sustainability targets and emphasis on reducing carbon emissions. The region is actively promoting clean energy technologies to comply with environmental standards and achieve energy transition goals. Scarcity of land resources is pushing the adoption of water-based solar systems as an efficient alternative. Supportive government initiatives, financial incentives, and research programs are fostering market expansion. Increasing awareness and continuous innovation are also contributing to growth, positioning Europe as a key region with strong future potential in floating solar development.

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Key players in the market

Some of the key players in Floating Solar and Water-Surface PV Market include Ciel & Terre International, Scotra Co. Ltd., Sungrow, Ocean Sun, Xiamen Mibet New Energy Co., Ltd.. Sharp Corporation, LONGi Green Energy Technology Co. Ltd., JinkoSolar Holding Co. Ltd., Kyocera Corporation, Trina Solar Limited, JA Solar Technology Co. Ltd., Canadian Solar Inc., Risen Energy Co. Ltd., First Solar Inc., GCL-Poly Energy Holdings Limited, SunPower Corporation, Vikram Solar Limited and Swimsol GmbH.

Key Developments:

In March 2026, Kyocera Corporation and Cosmo Energy Holdings have entered into a strategic agreement to exchange solar and wind power. Announced in March 2024, the collaboration aims to address one of the biggest challenges in clean energy—its variable nature—by balancing different sources of generation.

In July 2025, First Solar and UbiQD establish long-term quantum dot supply agreement. The supply agreement is expected to enable the early adoption of QD in thin film modules, which has the potential for UbiQD to grow to over 100 metric tons of production per year.

Components Covered:

- Solar Modules
- Floating Structures
- Anchoring & Mooring Systems
- Inverters & Electrical Equipment

Installation Types Covered:

- Onshore Reservoirs
- Offshore Water Bodies
- Natural Inland Water Bodies

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Capacities Covered:

- Small-scale (50 MW)

Technologies Covered:

- Pontoon-based Floating PV
- Membrane-based Floating PV
- Hybrid Floating PV

End Users Covered:

- Utility Power Generation
- Industrial Power Supply
- Commercial & Institutional Power
- Residential

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe

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- France
- Italy
- Spain
- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia

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- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil
- Argentina
- Colombia
- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa

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Egypt

Morocco

Rest of Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical

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presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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