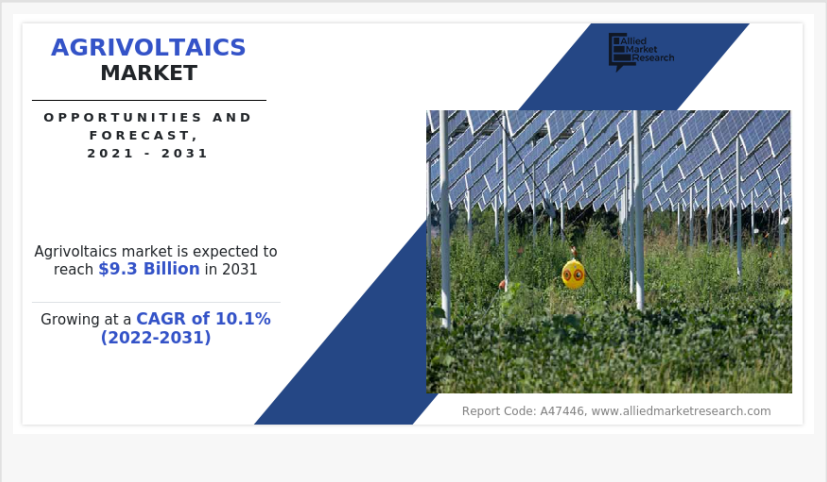
Rising Food Security and Renewable Energy Needs Fuel Growth in Agrivoltaics Market

Agrivoltaics Market to Reach $9.3 Billion by 2031, Driven by Land Scarcity and Clean Energy Demand



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According to a new report by Allied Market Research, the agrivoltaics market was valued at $3.6 billion in 2021 and is projected to reach $9.3 billion by 2031, growing at a CAGR of 10.1% from 2022 to 2031. The market is gaining momentum as the world seeks sustainable solutions for energy generation and food security.

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> Agrivoltaics market to hit $9.3B by 2031, growing at 10.1% CAGR, driven by land scarcity, clean energy demand & climate resilience. □□□”
>
> *Allied Market Research*

□ What is Agrivoltaics?

Agrivoltaics combines agriculture and solar photovoltaics, allowing land to serve dual purposes — crop cultivation and renewable energy generation. This approach maximizes land use efficiency, promotes sustainable rural development, and enhances biodiversity protection.

By placing solar panels above agricultural fields, farmers benefit from crop protection, reduced evaporation, and additional income from clean energy production. At the same time, energy providers gain access to land that traditionally would not be available for solar projects.

□□ Growth Drivers of the Agrivoltaics Market

The global agrivoltaics market is expected to expand rapidly, driven by:

Rising demand for clean energy to support the global transition away from fossil fuels.

Land scarcity and the need to optimize agricultural and energy usage.

Climate change and extreme weather events, such as droughts and heatwaves, which make agrivoltaics an attractive solution for protecting crops while generating zero-emission solar power.

For example, the world's largest agrivoltaics installation was developed on the edge of the Gobi Desert in China, where solar modules with a 700 MW capacity were built while allowing berries to grow beneath them.

 Market Challenges

Despite strong growth prospects, several challenges remain:

Regulatory hurdles and lack of international standardization.

Economic efficiency concerns, particularly regarding reduced crop yields in some cases.

The need for effective incentives such as subsidies, tax benefits, and risk reduction measures.

Greater farmer involvement and awareness about agrivoltaics benefits.

To promote healthy market growth, governments are expected to provide financial support, establish strict land-use regulations, and encourage collaborations between energy developers and farmers.

 Advantages of Agrivoltaics

Agrivoltaics offers multiple benefits for farmers, energy providers, and the environment:

Crop Protection: Panels shield plants from excessive sunlight, drought, hail, and heavy rains.

Improved Energy Efficiency: Plants release water vapor that naturally cools solar panels, boosting their efficiency.

Water Conservation: Shading reduces soil evaporation, helping farmers save water during hot summers.

Dual Revenue Streams: Farmers gain income from both agricultural production and solar energy generation.

These advantages make agrivoltaics a win-win solution for addressing both food and energy security challenges.

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 Market Segmentation

The agrivoltaics market is segmented by system design, cell type, crop type, and region.

System Design: Fixed solar panels dominated in 2021 and are expected to grow at the fastest pace (CAGR of 10.5%) due to ease of use and reliable power generation.

Cell Type: The monocrystalline segment accounted for over 51.7% of the market share in 2021, offering higher efficiency and expected to see robust growth.

Crop Type: The crop segment led the market in 2021, as solar panels shield crops from extreme weather. The vegetables segment is also expected to witness strong adoption.

Regional Insights: North America dominated the market in 2021 and is projected to grow at a CAGR of 10.7% during the forecast period, driven by shrinking arable land and strong demand for clean energy.

 Key Market Players

Leading companies in the global agrivoltaics market include:

Next2Sun

Sun’Agri

Ombrea

Namaste Solar

Mirai Solar

SunSeed APV

Enel Green Power S.p.A.

JA SOLAR Technology Co., Ltd.

BayWa AG

Insolight SA

These players are focusing on technological advancements, joint ventures, and regional expansion to strengthen their positions in the market.

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 Conclusion

The agrivoltaics market is poised for strong growth, fueled by the dual challenges of food security and renewable energy transition. With global capacity rising from just 5 MW in 2012 to 2.9 GW in 2020, the sector is gaining traction worldwide.

Although regulatory barriers and efficiency concerns remain, continued investments, government subsidies, and farmer participation are expected to accelerate adoption. By enabling clean energy generation and sustainable farming on the same land, agrivoltaics stands out as a transformative solution for the future of agriculture and energy.

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Pawan Kumar, the CEO of Allied Market Research, is leading the organization toward providing high-quality data and insights. We are in professional corporate relations with various companies and this helps us in digging out market data that helps us generate accurate research data tables and confirms utmost accuracy in our market forecasting. Each and every data presented in the reports published by us is extracted through primary interviews with top officials from leading companies of domain concerned. Our secondary data procurement methodology includes deep online and offline research and discussion with knowledgeable professionals and analysts in the industry.

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