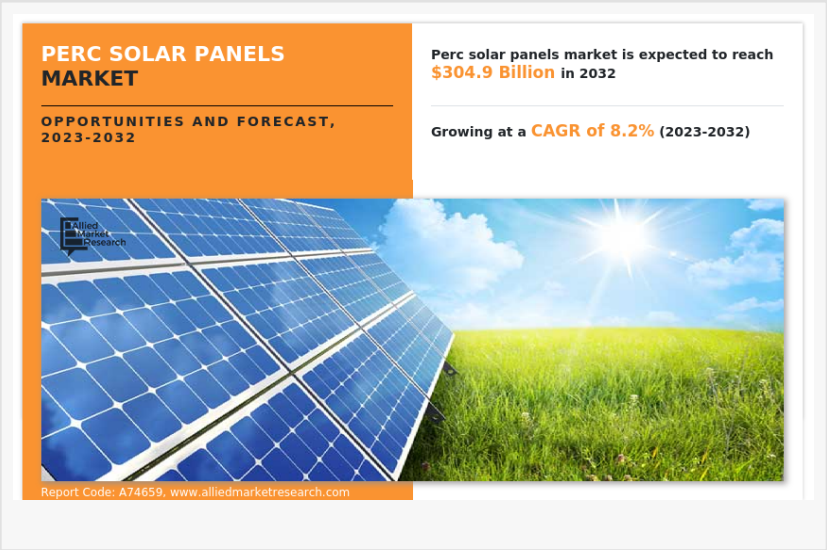
PERC Solar Panels Market Insights: Driving the Next Wave of Solar Energy Innovation

PERC Solar Panels Market Worth USD 304.9 billion by 2032 | Asia-Pacific Dominate by China, Japan, Australia, South Korea, Taiwan, Singapore, Malaysia, Hong Kong



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According to a new report published by Allied Market Research, the PERC solar panels market size was valued at $140.4 billion in 2022, and is estimated to reach $304.9 billion by 2032, growing at a CAGR of 8.2% from 2023 to 2032.

Passivated Emitter and Rear Contact Solar Panel refers to a type of solar panel technology. PERC solar panels are an advanced form of photovoltaic (PV) panels that feature a specific design to enhance their efficiency and power output.

> The growing demand for PERC solar panels offer higher conversion efficiencies compared to traditional solar cells. ”
>
> *Allied Market Research*

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Asia-Pacific registered the highest market share in 2022 and is projected to maintain its position during the forecast period.

The key players profiled in the PERC solar panel industry report include Sunnova Energy International, Inc., Jinko Solar, Canadian Solar, SolarEdge, First Solar, Inc., Trina Solar, JA Solar Holdings Co. Ltd., SunPower Corporation, Wuxi Suntech Power Co., Ltd., and REC Solar Holdings AS.

The rear surface passivation layer in PERC panels offers enhanced performance and long-term

benefits. This makes the panels more resilient to harsh weather conditions and extends their lifespan.

By reducing the impact of environmental factors, PERC panels are better equipped to maintain their performance over time.

Solar panels can experience a decrease in performance due to factors such as light-induced degradation (LID) and potential-induced degradation (PID). The passivation layer in PERC panels helps mitigate these issues by reducing electron recombination at the rear surface of the cell.

This leads to lower degradation rates and improved long-term performance, ensuring consistent electricity generation throughout the panel's lifespan.

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The improved reliability of PERC panels transforms into higher energy yield over their lifetime. By maintaining their efficiency and performance levels for a longer duration, PERC panels offer greater electricity production and yield more energy per installed capacity compared to conventional solar panels.

This characteristic makes them an attractive choice for residential, commercial, and utility-scale solar installations, maximizing the return on investment. These factors are anticipated to boost PERC solar panel market growth in the upcoming years.

PERC solar panels are designed to have improved durability and reliability due to the passivation of the rear surface. This layer helps reduce the recombination of charge carriers, minimizing energy loss within the solar cell. By passivating the rear surface, the panel's efficiency is improved, resulting in higher energy output.

The passivation layer on the rear surface of PERC solar cells acts as a protective barrier against environmental factors. It helps shield the panel from moisture, humidity, and temperature fluctuations, which can otherwise cause degradation and performance losses over time. By reducing the impact of these factors, PERC panels exhibit improved long-term durability.

Potential-induced degradation is a phenomenon that can occur in conventional solar panels, leading to power loss over time.

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PERC solar panels with passivated rear surfaces have shown a reduced susceptibility to PID. The passivation layer helps minimize the effects of voltage potential differences, ensuring the panel maintains its performance levels even in challenging operating conditions.

The improved durability and protection provided by the passivation layer contribute to lower degradation rates in PERC solar panels. With reduced energy losses and improved resistance to environmental stresses, PERC solar panel market tend to experience slower performance degradation over their operational lifetime.

This characteristic makes them an attractive choice for long-term solar installations, where consistent energy generation is essential. The combination of improved durability, reliability, and energy efficiency has driven the adoption of PERC solar panel market opportunities.

By type, it is classified into mono-crystalline and polycrystalline. The mono-crystalline sub-segment emerged as the global leader in 2022 and is anticipated to be the fastest growing during the forecast period.

By application, it is classified into residential, commercial, and utility. The utility sub-segment emerged as the global leader in 2022 and is predicted to show the fastest growth in the upcoming years.

By mounting, it is classified into roof-top and ground-mounted. The ground-mounted sub-segment emerged as the global leader in 2022 and is predicted to show the fastest growth in the upcoming years.

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By installation, it is classified into on-grid, off-grid, and hybrid. The on-grid sub-segment emerged as the global leader in 2022 and the hybrid sub-segment is predicted to show the fastest growth in the upcoming years.

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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.

David Correa
Allied Market Research
+ + 1 800-792-5285
email us here
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