

# **Bifacial Solar Market by Type (Dual-Glass, Glass-Backsheet), Frame Type (Framed, Frameless), Cell Technology (Passivated Emitter Rear Contact, Heterojunction, TOPCon), Application (Residential, Commercial & Industrial, Utilities) - Global Forecast to 2029**

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## **Abstracts**

The global bifacial solar market is estimated to grow from USD 18.5 billion in 2024 to USD 37.6 billion by 2029; it is expected to record a CAGR of 15.2% during the forecast period. Bifacial solar panels are increasingly achieving grid parity across various global markets, positioning them as viable competitors to conventional energy sources. This parity is driven by advancements in technology and manufacturing efficiencies, which have lowered production costs significantly. Coupled with supportive policies and incentives from governments, these panels offer not only enhanced energy capture from both sides but also improved overall economic feasibility.

“Passivated Emitter Rear Contact (PERC)”: The largest segment of the bifacial solar market, by cell technology“

Based on cell technology, the bifacial solar market has been segmented into Passivated Emitter Rear Contact (PERC), TOPCon, and Heterojunction (HJT). The Passivated Emitter Rear Contact (PERC) segment is expected to be the largest segment during the forecast period. PERC cells demonstrate robust compatibility with cutting-edge advancements such as half-cut cells and multi-busbar designs, significantly amplifying overall panel performance. This synergy enhances energy generation efficiency and durability, optimizing the utilization of sunlight in both conventional and bifacial solar panel configurations. This integration not only boosts power output but also contributes

to the scalability and cost-effectiveness of solar energy systems, reinforcing PERC technology's position as a pivotal driver in the evolving solar market landscape.

“By type, the Glass-backsheet Bifacial Solar segment is expected to be the second largest segment during the forecast period.”

Based on type, the bifacial solar market is segmented into glass-backsheet bifacial solar, and dual-glass bifacial solar. The glass-backsheet bifacial solar segment is expected to be the second largest segment of the bifacial solar market during the forecast period. As manufacturers refine their processes, such as the lamination of glass backsheet materials and the application of bifacial cell technology, production efficiencies improve. These advancements not only enhance the overall performance and durability of bifacial panels but also contribute to significant cost reductions over time. Moreover, innovations in materials science and engineering contribute to cost savings by improving the reliability and longevity of glass-backsheet panels, reducing maintenance costs and enhancing their overall lifetime value. Combined with supportive regulatory frameworks and increasing investor confidence in renewable energy technologies, these cost reduction efforts foster a favorable environment for the widespread adoption of glass-backsheet bifacial solar panels in both residential and utility-scale solar installations.

“Asia Pacific” is expected to be the largest region in the bifacial solar market.”

Asia Pacific is expected to be the largest region in the bifacial solar market during the forecast period. Enhanced grid integration capabilities and improved grid stability are pivotal factors bolstering the feasibility and attractiveness of deploying bifacial solar projects across the Asia-Pacific region. As countries in this region continue to expand their renewable energy capacities, the integration of bifacial solar into existing grids becomes increasingly seamless. This advancement not only supports the reliability of electricity supply but also facilitates the efficient management of fluctuating renewable energy sources. Furthermore, advancements in grid technology tailored to regional climatic conditions and energy consumption patterns further optimize the performance of bifacial solar installations, promoting their widespread adoption as a sustainable energy solution in the Asia-Pacific context.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants,

among other experts, to obtain and verify critical qualitative and quantitative information and assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Level- 25%, and Others- 45%

By Region: North America- 10%, Europe- 25%, Asia Pacific- 35%, Middle East – 5%, Africa – 15%, South America – 10%

Note: Others include sales managers, engineers, and regional managers.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The bifacial solar market is dominated by a few major players that have a wide regional presence. The leading players in the bifacial solar market are LONGi (China), Trinasolar (China), Canadian Solar (Canada), JA SOLAR Technology Co., Ltd. (China), and SHARP CORPORATION (Japan). The major strategy adopted by the players includes new product launches, contracts, agreements, partnerships, joint ventures, acquisitions, and investments & expansions.

#### Research Coverage:

The report defines, describes, and forecasts the global bifacial solar Market based on type, frame type, cell technology, application, and region. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the bifacial solar market.

#### Key Benefits of Buying the Report

Government initiatives at the national and international levels amplify the impact of investment on the bifacial solar market. Robust policy frameworks, often accompanied by financial incentives, subsidies, and regulatory support, encourage widespread adoption of bifacial solar. Factors such as high initial cost and lack of infrastructure restrain the growth of the market. The growing energy transition towards renewable energy sources and rapid urbanization are expected to present lucrative opportunities for the players operating in the

bifacial solar.

**Product Development/ Innovation:** The bifacial solar market is witnessing significant product development and innovation, driven by the growing demand for environmentally friendly, safe and sustainable products. Companies are investing in developing advanced bifacial solar for various applications.

**Market Development:** Canadian Solar has announced a multi-year agreement with Lightsource BP to supply 1.2 GW of high-efficiency polycrystalline solar modules for projects in the US and Australia. The projects will utilize Canadian Solar's polycrystalline bifacial BiHiKu (CS3W-PB-AG) and HiKu (CS3W-P) modules. Canadian Solar, known globally for its solar cell and module innovations, specializes in bifacial modules that generate power from both the front and rear sides, increasing output compared to standard monofacial modules. The BiHiKu bifacial modules, noted for their high output, are expected to maximize power generation within limited plant areas.

**Market Diversification:** Canadian Solar has announced the establishment of a new 5 GW solar PV cell manufacturing facility at the River Ridge Commerce Center in Jeffersonville, Indiana. This state-of-the-art plant will produce approximately 20,000 high-power modules daily, contributing significantly to solar energy production. Representing an investment exceeding \$800 million, the facility is projected to generate about 1,200 skilled high-tech jobs once fully operational. The solar cells manufactured here will support Canadian Solar's module assembly plant in Mesquite, Texas, with production set to commence by the end of 2025.

**Competitive Assessment:** In-depth assessment of market shares, growth strategies, and service offerings of leading players, like include LONGi (China), Trinasolar (China), Canadian Solar (Canada), JA SOLAR Technology Co., Ltd. (China), and SHARP CORPORATION (Japan) among others in the bifacial solar market.

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