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Bifacial Solar Market Forecasts to 2032 – Global Analysis By Type (Monocrystalline Bifacial Panels, Thin-Film Bifacial Panels, Polycrystalline Bifacial Panels and Other Types), Installation Type, Mounting System, Frame, Cell Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Bifacial Solar Market is accounted for $19.02 billion in 2025 and is expected to reach $40.43 billion by 2032 growing at a CAGR of 17.2% during the forecast period. Bifacial solar panels are a type of photovoltaic (PV) system that captures sunlight on both sides of the panel. Bifacial panels can generate electricity from both the front and rear surfaces. This is achieved by allowing light to reflect off the ground or surrounding surfaces, boosting overall energy production. Bifacial panels are especially effective in environments with high reflectivity, such as snowy or sandy areas, and can significantly increase efficiency compared to conventional solar panels.

According to a report tilted, ground-mounted solar installation in China, bifacial panels produced 11% more energy than standard solar panels.

Market Dynamics:

Driver:

Rising demand for clean energy

As countries and organizations push to reduce carbon emissions and transition to

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sustainable energy sources, solar power plays a crucial role. Bifacial solar panels, known for their higher efficiency and energy production due to their ability to capture sunlight from both sides, offer a more attractive option compared to traditional panels. This increased efficiency helps meet the growing energy needs while lowering overall costs. Additionally, government incentives and sustainability targets further fuel the adoption of bifacial solar technology, accelerating market expansion.

Restraint:

Complex installation requirements

Bifacial solar panels have complex installation requirements because their efficiency depends on factors like panel tilt angle, mounting height, and the reflectivity of the surface beneath them. Additionally, these panels require advanced tracking systems in some cases to further enhance performance. These factors increase installation complexity, time, and cost. For the market, this hampers adoption by making bifacial systems less accessible for smaller projects or regions with limited space, as well as increasing upfront investment.

Opportunity:

Mounting utility-scale projects

Large-scale installations often have ample space, making them ideal for bifacial panels, which capture sunlight from both the front and rear surfaces. As utility-scale projects expand globally to meet renewable energy goals, bifacial solar technology offers higher efficiency, reduces the levelized cost of electricity (LCOE), and improves return on investment. The growing trend of solar power adoption, driven by sustainability efforts and government incentives, increases the demand for bifacial panels in large-scale energy projects, fueling market growth.

Threat:

High initial investment

Bifacial solar panels require a higher initial investment due to their advanced technology, including dual-glass construction and more sophisticated manufacturing processes. Additionally, they often require specialized mounting systems and optimal installation conditions to maximize their efficiency, adding to the overall cost. This higher

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upfront price can deter potential buyers, particularly in regions where budget constraints are a concern.

Covid-19 Impact:

The covid-19 pandemic had a mixed impact on the bifacial solar market. On one hand, the global disruption in supply chains, factory shutdowns, and reduced construction activities slowed down solar panel production and installations. On the other hand, the growing focus on renewable energy and sustainability, as well as government incentives for clean energy, helped mitigate some of the negative effects. The pandemic also accelerated the shift toward green energy, driving long-term interest in more efficient solar technologies, like bifacial panels, as part of economic recovery plans.

The monocrystalline bifacial panels segment is expected to be the largest during the forecast period

The monocrystalline bifacial panels segment is expected to account for the largest market share during the forecast period. Monocrystalline bifacial panels are a type of solar panel made from high-purity silicon, known for their high efficiency and durability. These panels capture sunlight on both the front and rear surfaces, enhancing energy production by utilizing reflected light from the ground or surrounding surfaces. Due to their superior efficiency, they are ideal for areas with high solar reflectivity.

The commercial & industrial (C&I) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the commercial & industrial (C&I) segment is predicted to witness the highest growth rate due to their higher energy efficiency and cost-effectiveness. These panels capture sunlight from both sides, generating more electricity, which is particularly beneficial for large-scale installations with ample space. The enhanced energy yield reduces the levelized cost of electricity (LCOE), making them an attractive option for businesses seeking to lower energy costs and improve sustainability. Their durability and performance in diverse environmental conditions also support long-term commercial viability.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share driven by rising energy demand, government incentives, and increasing

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investments in renewable energy. Countries like China, India, Japan, and Australia are leading the adoption of bifacial solar technology due to their abundant sunlight and large-scale solar projects. Additionally, the declining costs of bifacial solar panels and technological advancements make them a viable option for both residential and commercial applications in Asia-Pacific.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, fuelled by strong government policies promoting clean energy, such as tax incentives and renewable energy targets. The U.S. and Canada are key players, with increasing investments in large-scale solar projects and a shift toward more efficient solar technologies. Additionally, advancements in solar technology, combined with rising environmental awareness and sustainability goals, are driving the adoption of bifacial solar systems across residential, commercial, and industrial sectors.

Key players in the market

Some of the key players in Bifacial Solar Market include Adani Solar, 3D Energy, ABi-Solar, AEG Solar, AIDU ENERGY, AGORA Solar, Akcome Optronics Science & Technology, Canadian Solar, LG Electronics, JinkoSolar, Panasonic, Jolywood Group, LONGi, Lumos Solar, Premier Energies Limited, Neosun Inc and 5Star Solar.

Key Developments:

In April 2024, Adani Solar introduced the 575 W TOPCon bifacial PV module. This module utilizes tunnel oxide passivated contact (TOPCon) cell technology and features a translucent backsheet. It measures 2,266 x 1,133 mm and weighs 28 kg. Designed for a maximum system voltage of 1,500 V, it comprises 182 mm (M10) 16BB half-cut cells.

In January 2024, JinkoSolar supplied 2,381 MW of bifacial solar panels to Adani Green Energy Ltd (AGEL) for a major project in Khavda, Gujarat, India. This included 1,370 MW of Tiger Neo bifacial and 1,011 MW of Tiger Pro bifacial modules. The Tiger Neo panels represent the largest single order of N-Type TOPCon modules in India.

Types Covered:

Monocrystalline Bifacial Panels

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Thin-Film Bifacial Panels

Polycrystalline Bifacial Panels

Other Types

Installation Types Covered:

Ground-Mounted Systems

Rooftop Installations

Floating Solar Farms

Other Installation Types

Mounting Systems Covered:

Fixed Tilt Systems

Single-Axis Tracking Systems

Dual-Axis Tracking Systems

Frames Covered:

Framed Bifacial Panels

Frameless Bifacial Panels

Cell Technologies Covered:

Passivated Emitter and Rear Cell (PERC)

Tunnel Oxide Passivated Contact (TOPCon)

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Heterojunction Technology (HJT)

Interdigitated Back Contact (IBC)

Other Cell Technologies

Applications Covered:

Utility-Scale Power Generation

Agrivoltaics (Agri-PV)

Transportation & Infrastructure

Floating Solar Farms

Off-Grid & Remote Power Supply

Other Applications

End Users Covered:

Energy & Power

Commercial & Industrial (C&I)

Residential

Data Centers & IT Industry

Telecommunications

Defense & Military

Other End Users

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Regions Covered:

- North America
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  - Mexico
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  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific

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South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & 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 2024, 2025, 2026, 2028, and 2032
- 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

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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 presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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