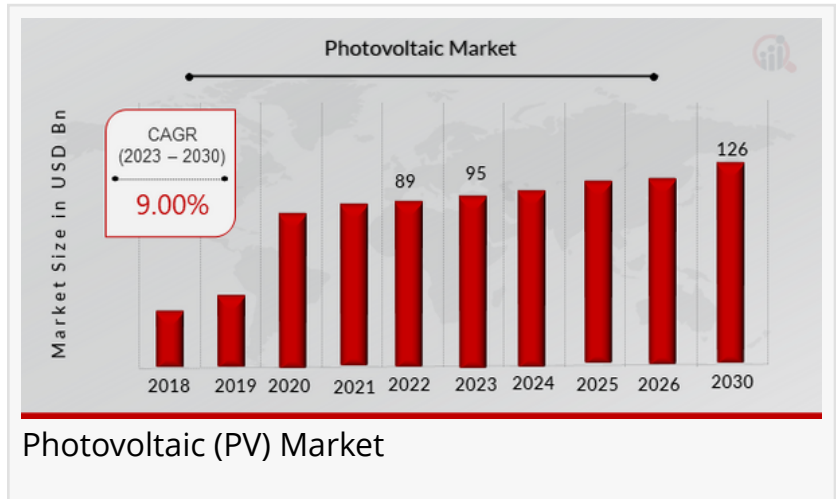


# Photovoltaic Market to Grow CAGR of 9% by 2030 | JA Solar Holdings, Kaneka Corporation, Sharp Corporation

*PV systems are widely used in converting sunlight into electricity. It is eco-friendly as it can produce energy without increasing the carbon footprint.*

NEW YORK, NY, UNITED STATES, April 24, 2025 /EINPresswire.com/ -- [photovoltaic market](#) to Grow CAGR of 9% by 2030 | JA Solar Holdings, Kaneka Corporation, Sharp Corporation



The Photovoltaic (PV) Market Size was valued at USD 89 Billion in 2022. The Photovoltaic (PV) market industry is projected to grow from USD 95 Billion in 2023 to USD 126 Billion by 2030, exhibiting a compound annual growth rate (CAGR) of 9.00% during the forecast period (2023 - 2030).

## Introduction to the Global Photovoltaic Market

The photovoltaic market has emerged as one of the most dynamic and rapidly evolving sectors in the renewable energy industry. As the world accelerates its transition to clean energy, photovoltaic technology has become a cornerstone in efforts to reduce greenhouse gas emissions and combat climate change. With increasing investments, favorable government policies, and technological innovations, the global PV market is set for exponential growth in the coming decade.

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## Current Market Overview and Size

## Key Drivers Fueling Photovoltaic Market Growth

## Rising Demand for Renewable Energy Sources

Countries across the globe are intensifying their commitments to renewable energy targets. Solar PV systems, with their ability to be deployed in a wide range of environments, are playing a central role in this transition. The declining Levelized Cost of Electricity (LCOE) from PV systems makes them more economically viable than traditional fossil fuel sources in many regions.

### Government Incentives and Policy Support

Incentives such as feed-in tariffs, investment tax credits (ITC), net metering, and green energy subsidies are significantly enhancing the attractiveness of solar PV systems. For example, the U.S. Inflation Reduction Act of 2022 offers extended tax credits that support both residential and commercial solar projects, creating a favorable regulatory environment.

### Technological Advancements in PV Modules

The evolution from traditional monocrystalline and polycrystalline modules to passivated emitter and rear contact (PERC), bifacial, and heterojunction technology (HJT) has substantially improved the efficiency and lifespan of PV modules. These innovations help reduce the balance of system (BoS) costs and improve energy yield per square meter, making solar more appealing.

### Corporate Sustainability and Decarbonization Goals

Corporations are increasingly adopting PV systems to meet Environmental, Social, and Governance (ESG) benchmarks. Large multinationals are committing to 100% renewable energy targets, fueling demand for on-site and off-site solar installations.

### Segmentation Analysis of the Photovoltaic Market

#### By Technology

**Crystalline Silicon (c-Si):** Dominates the market due to high efficiency and declining production costs.

**Thin Film:** Preferred for utility-scale installations in arid regions due to better temperature coefficient.

**Emerging PV (Perovskite, Organic PV):** Gaining traction for their lightweight and flexible properties.

#### By Deployment

**Residential:** Witnessing growth due to rooftop installations and smart home integrations.

**Commercial & Industrial (C&I):** Offers cost-saving opportunities and independence from grid

volatility.

Utility-Scale: Backbone of large-scale solar farms; driven by auctions and power purchase agreements (PPAs).

By Grid Type

On-Grid: Most common due to the ability to sell excess power.

Off-Grid: Crucial for electrification in rural and remote areas.

Hybrid: Increasingly preferred for energy resilience and storage integration.

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Regional Insights: Growth Hotspots Across the Globe

Asia Pacific: Market Leader with Unmatched Scale

China, India, and Japan are leading the charge. China alone accounts for over 30% of the global PV capacity, driven by state-backed projects and robust manufacturing ecosystems. India's solar mission aims for 280 GW of solar capacity by 2030.

Europe: Sustainability-Driven Expansion

Germany, Spain, and Italy are spearheading PV installations in Europe. The European Green Deal and the REPowerEU Plan have created a conducive atmosphere for solar energy development, targeting energy independence from fossil fuel imports.

North America: Policy-Backed Growth Surge

The United States is experiencing a solar renaissance with policies supporting distributed generation, energy storage integration, and community solar initiatives. Canada's provinces like Alberta and Ontario are also pushing for clean energy transformation.

Middle East & Africa: Untapped Potential

Countries like Saudi Arabia, UAE, and Egypt are investing heavily in solar mega-projects. Africa, with its abundant solar resources, presents a massive opportunity, particularly in off-grid rural electrification.

Latin America: Steady Growth Trajectory

Brazil, Chile, and Mexico are becoming attractive PV markets due to favorable climatic conditions and auctions offering competitive tariffs.

## Emerging Trends Shaping the PV Landscape

### Integration with Energy Storage Systems (ESS)

The coupling of PV systems with battery energy storage systems (BESS) ensures 24/7 clean energy and supports grid stability. This is increasingly becoming the norm for both residential and utility-scale projects.

### Digitalization and Smart Solar Technologies

The rise of IoT, AI, and blockchain in PV systems enables predictive maintenance, real-time performance tracking, and peer-to-peer energy trading, thus enhancing system efficiency and ROI.

### Floating Solar Photovoltaics

Floating solar (FPV) is emerging as an innovative solution to land constraints. Countries like Singapore, South Korea, and India are investing in FPV projects on reservoirs, lakes, and hydropower dams.

### Building-Integrated Photovoltaics (BIPV)

BIPV systems are transforming architecture by integrating PV directly into building materials like glass, rooftops, and facades. This reduces aesthetic concerns and maximizes usable surface area.

## Challenges in the Photovoltaic Market

Despite the immense promise, the market faces several challenges:

**Supply Chain Bottlenecks:** Shortages in materials like polysilicon and silver can slow down production.

**Intermittency Issues:** Solar power's dependence on sunlight necessitates grid upgrades and storage support.

**Policy Uncertainty:** Inconsistent regulatory frameworks and retroactive policy changes can deter investment.

## Competitive Landscape and Key Players

Major players dominating the PV landscape include:

Risen Energy Co. Ltd

Shunfeng International Clean Energy Limited

Mitsubishi Electric Corporation

GCL System Integration

JA Solar Holdings

Kaneka Corporation

Sharp Corporation

Suntech Power Co.

Trina Solar Limited

Canadian Solar Inc.

Jinko Solar Holding Co., Ltd among others

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These companies invest heavily in R&D, manufacturing capacity expansion, and strategic partnerships to maintain their competitive edge.

## Future Outlook and Strategic Opportunities

The future of the photovoltaic market is poised for transformative growth. With the right mix of policy support, technological innovation, and market incentives, the PV industry is expected to become the largest source of global electricity generation by 2050. New markets in Sub-Saharan Africa, Southeast Asia, and Eastern Europe are opening up, presenting untapped investment opportunities.

Stakeholders, including utilities, developers, investors, and governments, must focus on grid modernization, storage infrastructure, and workforce training to support this solar revolution.

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