

Perovskite Solar Cell Market to Reach \$2.7 Bn by 2028 | Lightweight & Flexible Panels Reshape Renewable Energy Landscape

Perovskite solar cell market set to hit \$2.7 Bn by 2028, fueled by demand for flexible, lightweight, and high-efficiency renewable energy tech.

WILMINGTON, DE, UNITED STATES,
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[Perovskite Solar Cell Market](#)
Overview

According to a new report by Allied Market Research, the global perovskite solar cell market was valued at \$0.7 billion in 2023 and is projected to reach \$2.7 billion by 2028, growing at an impressive CAGR of 33.3% from 2024 to 2028.

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Allied Market Research

Perovskite solar cells (PSCs) utilize unique perovskite-structured materials (typically hybrid lead or tin halides) to absorb sunlight and convert it into electricity. These next-gen photovoltaic (PV) technologies are lighter, more flexible, and cheaper to manufacture than conventional silicon solar cells—making them the future of solar energy.

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□ Key Growth Drivers

Asia-Pacific Solar Boom

Report Insights



Market was valued at
\$0.7 Billion
2023

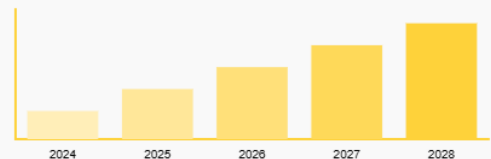


Projected to reach
\$2.7 Billion
2028



Growing at a CAGR
33.3% From
2024-2028

CAGR 33.3%



Perovskite Solar Cell Market
Report Code: A13745

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Countries like China, Japan, and India are aggressively expanding solar PV capacity due to rising urbanization, industrialization, and energy demand. Government incentives, R&D funding, and renewable energy targets are accelerating PSC adoption.

Lightweight & Flexible Solar Panels

Increasing demand for easy-to-install, adaptable solar panels for residential, commercial, and mobile applications is fueling growth. PSCs outperform rigid silicon panels in terms of versatility and deployment in space-constrained or mobile settings.

Cost-Effective Production

Manufactured using low-energy processes like roll-to-roll printing, perovskite cells reduce capital and operational expenses—making mass production feasible and affordable.

Environmental Goals & Sustainability

Global push for clean energy and net-zero carbon targets is increasing demand for renewable sources that minimize environmental impact. PSCs support low-emission, high-efficiency power generation.

□ Market Segmentation

By Structure:

Planar Perovskite Solar Cells

Mesoporous Perovskite Solar Cells

By Product:

Rigid PSCs

Flexible PSCs – gaining traction for wearables, drones, and automotive integration

By Method:

Solution Method

Vapor Deposition Method

Vapor-Assisted Solution Method

By End Use:

Aerospace

Consumer Electronics

Industrial Automation

Energy

Others

Procure This Report (380 Pages PDF with Insights, Charts, Tables, and Figures):

<https://bit.ly/3BaI965>

□□ Building-Integrated Photovoltaics (BIPV): The Game Changer

The integration of PSCs into building materials—such as windows, facades, and roofing tiles—is revolutionizing the BIPV sector. Their tunable bandgap, thin profile, and lightweight nature allow architects to design smart buildings that generate their own power.

This trend aligns with global efforts to build net-zero cities and reduce reliance on traditional grid infrastructure.

□ Innovative Applications

Electric Vehicles (EVs): PSCs can power onboard systems or provide range-extending rooftop panels.

Drones & Aerospace: Ideal for weight-sensitive platforms that require high-efficiency power.

Portable Devices: Flexible PSCs are powering the next wave of wearables, mobile chargers, and off-grid electronics.

□ Leading Market Players

Oxford Photovoltaics

Front Materials Co. Ltd.

Saule Technologies

Hanwha Group

Panasonic Holdings Corporation

LONGi

Toshiba Corporation

Xiamen Weihua Solar Co. Ltd.

Phono Solar Technology Co., Ltd.

SKY ENERGY INDONESIA

These companies are investing in commercialization, durability R&D, and large-scale manufacturing to overcome barriers like longevity and efficiency retention.

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□ Global Outlook

With Asia-Pacific dominating due to government initiatives and [solar manufacturing](#) hubs, Europe and North America are catching up through urban integration projects and green energy regulations. Smart city frameworks and grid decentralization are further expected to drive adoption.

□ Conclusion

Perovskite solar cells are redefining solar energy by offering efficiency, flexibility, and cost-effectiveness. With projections of \$2.7 billion by 2028, the market is set to transform how the world powers homes, industries, and cities—heralding a cleaner, smarter, and more adaptable energy future.

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Solar Cell Market

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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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