

Solar Lights Market to Hit \$14.2 Billion by 2031 | 6.2% CAGR Driven by Clean Energy Adoption

□ *Global Solar Lights Market Forecast: Strong Growth Ahead with Demand for Eco-Friendly Lighting*

WILMINGTON, DE, UNITED STATES,
August 28, 2025 /EINPresswire.com/ --

According to a report published by Allied Market Research, the [solar lights market](#) size was valued at \$8.1 billion in 2021 and is projected to reach \$14.2 billion by 2031, growing at a CAGR of 6.2% from 2022 to 2031. This growth is driven by the rising demand for renewable energy solutions, increasing adoption of solar street lights, and government initiatives promoting clean energy.

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The solar lights market will reach \$14.2B by 2031, fueled by clean energy demand, government support & adoption in infrastructure projects.”

Allied Market Research

friendly lighting solution.

Key Benefits of Solar Lights

Cost Savings □ – Lower installation and maintenance costs compared to traditional lighting.

Sustainability □ – Powered by renewable energy, reducing carbon emissions.



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Solar lights are powered by [solar photovoltaic \(PV\) panels](#), batteries, control electronics, and light fixtures. These systems absorb sunlight during the day, convert it into electricity, and store it in batteries to provide illumination at night. The ability to operate independently of the power grid makes solar lights an affordable, durable, and eco-

Improved Safety & Security □ – Solar street lights help reduce nighttime accidents and crime rates.

· Accessibility □ – Provide lighting in remote and off-grid areas where electricity is limited.

Evolution of Solar Lighting

The journey of solar technology began in 1954 at Bell Labs, where modern solar cells were invented for satellite power. Although initially expensive, the cost of solar energy has dropped dramatically, making solar-powered solutions affordable and widely accessible. Today, solar lighting has evolved into a mainstream solution for residential, commercial, and infrastructure projects worldwide.

Market Drivers for Solar Lights

Clean Energy Adoption □ Rising awareness about climate change and the need for sustainable solutions are fueling the adoption of solar lights globally.

Government Initiatives □□ Programs promoting solar street lights and renewable infrastructure projects are accelerating market growth.

Public Infrastructure Demand □ The use of solar lights in highways, roadways, and rural electrification projects enhances safety and reduces dependency on the grid.

Residential & Commercial Usage □□ Solar lights improve property aesthetics, security, and safety, making them popular in housing projects, gardens, and corporate campuses.

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Market Segmentation

By Type

Outdoor Solar Lights – Held 90.7% market share in 2021 and expected to grow at the highest CAGR of 6.2%. Their affordability, reliability, and ease of installation make them highly preferred in residential areas, roadways, and public spaces.

Indoor Solar Lights – A smaller share, but gaining traction in energy-saving households.

By Panel Type

Polycrystalline Solar Panels – Dominated the market with 50.5% revenue share in 2021 and are projected to grow at a CAGR of 6.4%. Their durability in extreme weather and cost-effectiveness make them the leading choice.

Monocrystalline and Amorphous Panels – Also used but with smaller market shares.

By Solar Power System

Off-Grid Solar Systems – Accounted for 74.2% market share in 2021 and are projected to grow at 6.3% CAGR. Widely adopted for highways, gardens, and rural projects, off-grid solutions avoid power outages and reduce electricity costs.

On-Grid & Hybrid Systems – Used in urban projects where grid connectivity exists but solar provides backup and cost savings.

By Application

Highways & Roadways – Largest application segment with 42.8% revenue share in 2021, expected to grow at 6.6% CAGR. Governments are increasingly adopting [solar street lighting](#) to enhance road safety and security.

Residential, Commercial, and Industrial Applications – Growing demand for solar lighting in parking areas, gardens, and security installations.

By Region

Asia-Pacific – Leading region with 34.5% market share in 2021, projected to grow at 6.4% CAGR. Growth is driven by rapid solar adoption in China and India.

North America & Europe – Strong growth due to renewable energy initiatives and rising electricity costs.

LAMEA – Emerging opportunities in rural electrification and infrastructure development.

Competitive Landscape

Key players in the solar lights market include:

Jinhua Sunmaster Lighting Co. Ltd.

Solar Street Lights USA

Sunna Design SA

ENGOPLANET Energy Solutions LLC

Engcotec GmbH

Kon Lighting

SEPCO

Fonroche Lighting America Inc.

Greenshine New Energy

Koninklijke Philips N.V.

Wipro Lighting

These companies are focusing on technological innovation, partnerships, and large-scale infrastructure projects to expand their market presence.

Future Outlook

The future of the solar lights market looks promising, with demand rising across both developed and developing regions. Increasing investments in smart cities, rural electrification, and clean energy infrastructure will fuel adoption.

With governments pushing for carbon neutrality and consumers embracing eco-friendly lighting, solar lights are set to become an integral part of modern infrastructure worldwide.

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Conclusion

The global solar lights market is projected to grow from \$8.1 billion in 2021 to \$14.2 billion by 2031, expanding at a CAGR of 6.2%. Key growth drivers include government support, rising consumer demand for sustainable products, and rapid adoption in infrastructure projects. With Asia-Pacific leading the charge and technological innovations enhancing efficiency, solar lights will play a crucial role in shaping a cleaner, safer, and greener future.

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