

Solar Power Bank Market Forecasts to 2032 – Global Analysis By Product (Foldable Solar Power Banks, Portable Solar Power Banks, Built-In Solar Panel Power Banks), Battery Chemistry, Battery Capacity, Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Solar Power Bank Market is accounted for \$17.6 billion in 2025 and is expected to reach \$35.6 billion by 2032 growing at a CAGR of 10.6% during the forecast period. A solar power bank is a portable energy storage device that harnesses sunlight through built-in photovoltaic panels to generate and store electricity. It typically features rechargeable batteries, USB ports, and sometimes wireless charging capabilities to power electronic devices like smartphones, tablets, and cameras. Designed for outdoor use and emergency situations, solar power banks offer eco-friendly, off-grid charging solutions. They vary in capacity, durability, and efficiency, with some models including waterproof casings, LED flashlights, and multiple charging ports. By converting solar energy into usable power, these devices provide a sustainable alternative to conventional charging methods, especially in remote or power-deficient areas.

According to Solar Market Insight Report Q4 2024, the United States established 8.6 GW solar capacities in 3rd quarter of 2024, contributing 64% of new power generation during this period.

Market Dynamics:

Driver:

Growing demand for sustainable energy solutions

The growing demand for sustainable energy solutions is significantly boosting the Solar Power Bank Market by aligning with global environmental goals and consumer preferences for eco-friendly products. As awareness of climate change intensifies, individuals increasingly seek renewable alternatives to conventional charging methods. Solar power banks offer clean, off-grid energy ideal for outdoor use and emergency scenarios. This shift toward green technology, supported by government initiatives and improved solar panel efficiency, is driving widespread adoption and innovation across both developed and emerging markets.

Restraint:

High initial costs

High initial costs pose a significant barrier to the growth of the solar power bank market. These devices often require advanced photovoltaic cells and high-capacity batteries, leading to a higher price point compared to traditional power banks. For cost-sensitive consumers, this deters purchase despite the long-term benefits. Additionally, the perception of limited value return and slow charging speeds under low sunlight conditions further discourages widespread adoption, hindering overall market expansion.

Opportunity:

Rising reliance on mobile electronics

The rising reliance on mobile electronics is fueling growth in the Solar Power Bank Market by amplifying demand for portable, renewable charging solutions. As smartphones, tablets, and wearables become essential to daily life, consumers seek reliable power sources for on-the-go usage. Solar power banks offer a sustainable alternative, especially in outdoor and remote settings. This trend is further supported by increased travel, digital lifestyles, and eco-conscious preferences, positioning solar power banks as indispensable accessories in the mobile electronics ecosystem.

Threat:

Unreliable charging in low-light

Unreliable charging in low-light conditions significantly hinders the growth of the solar

power bank market. Since these devices rely on sunlight to generate power, their efficiency drops drastically in cloudy weather, shaded areas, or during night time. This limitation reduces their dependability for consistent use, especially in regions with limited sunlight. As a result, consumers may opt for traditional power banks, restricting the widespread adoption of solar-powered alternatives in the portable charging market.

Covid-19 Impact

The Covid-19 pandemic had a mixed impact on the solar power bank market. Initially, global supply chain disruptions and manufacturing halts led to production delays and limited product availability. However, as remote work and outdoor activities increased, so did the demand for portable and renewable energy solutions. While economic uncertainty temporarily slowed consumer spending, the market gradually recovered through rising environmental awareness and the shift toward e-commerce and digital sales channels.

The lithium-ion segment is expected to be the largest during the forecast period

The lithium-ion segment is expected to account for the largest market share during the forecast period, due to its superior energy density, long cycle life, and lightweight design. These batteries enable compact, high-capacity power banks ideal for outdoor and emergency use. Their fast-charging capabilities and stable performance enhance user convenience, while durability supports frequent mobile device usage. As demand for efficient, portable, and eco-friendly charging grows, lithium-ion technology driving innovation and widespread adoption across consumer electronics and renewable energy applications.

The laptops segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the laptops segment is predicted to witness the highest growth rate, due to demand for high-capacity, portable charging solutions. As remote work, travel, and mobile productivity rise, users seek reliable off-grid power sources for energy-intensive devices. Solar power banks tailored for laptops offer fast charging, multiple output ports, and eco-friendly energy, aligning with sustainability goals. This segment's growth is further driven by advancements in solar panel efficiency and lithium-ion technology, making solar charging a viable alternative for laptop users worldwide.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share due to rising smartphone penetration, outdoor lifestyles, and limited grid access in rural areas. Countries like China, India, and Japan lead in solar technology manufacturing and adoption, supported by government incentives and sustainability goals. Increasing awareness of renewable energy and demand for off-grid charging solutions are accelerating growth. Technological advancements and declining solar panel costs further enhance affordability, positioning Asia Pacific as a dominant force in global solar innovation.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to rising environmental awareness and increasing demand for portable, renewable energy solutions. The region's high penetration of smartphones and outdoor recreational activities fuels the need for reliable off-grid charging. Supportive government initiatives promoting clean energy, along with technological advancements in solar panel efficiency and battery capacity, are further accelerating market adoption. Additionally, frequent power outages and a growing emphasis on emergency preparedness are boosting product demand.

Key players in the market

Some of the key players profiled in the Solar Power Bank Market include Anker Innovations, RavPower, Goal Zero, EcoFlow, Shenzhen Ayyie Power Co., Ltd., BEARTWO, Renogy, BLAVOR, Solio, Poweradd, Suntrica, Xtorm, Jackery Inc., Cobra Electronics Corporation, ALLPOWERS Industrial International Limited, Aukey, Feelle, FosPower, BigBlue and Zendure.

Key Developments:

In June 2025, Cobra Electronics has expanded its business solutions portfolio with the launch of the PX280, a compact and wearable two-way radio designed for fast-paced environments such as retail, restaurants, and hospitality. The radio is aimed at improving team productivity and efficiency in customer-facing settings.

In January 2025, Big Blue Technologies Inc. (BBT) and Baymag Inc. have formalized a strategic agreement through a Letter of Understanding to supply up to 4,000 tons of high-grade magnesium oxide (MgO) on an exclusive basis. This milestone is designed to fortify North America's magnesium supply chain by underpinning BBT's planned

commercial demonstration plant targeting an annual production capacity of 2,000 tons of magnesium metal.

Products Covered:

Foldable Solar Power Banks

Portable Solar Power Banks

Built-In Solar Panel Power Banks

Battery Chemistries Covered:

Lithium-ion

Lithium Polymer

Nickel Metal Hydride

Battery Capacities Covered:

Below 5,000 mAh

5,001–10,000 mAh

10,001–20,000 mAh

Above 20,000 mAh

Technologies Covered:

Monocrystalline Solar Technology

Polycrystalline Solar Technology

Thin-Film Solar Technology

Applications Covered:

Smartphones

Tablets

Laptops

Cameras

Other Applications

End Users Covered:

Individual Consumers

Commercial

Military

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

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 2022, 2023, 2024, 2026, and 2030
- 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 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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