

# Solar Powered Cold Storage Market to Expand at a 15.6% CAGR by 2029, Reaching US \$5.39 Billion

*The Business Research Company's Solar Powered Cold Storage Market to Expand at a 15.6% CAGR by 2029, Reaching US \$5.39 Billion*

LONDON, GREATER LONDON, UNITED KINGDOM, December 3, 2025  
/EINPresswire.com/ -- "How Much Is The Solar Powered Cold Storage Market Worth?

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The market size of solar powered cold storage has seen a quick expansion of late. Projected growth is from \$2.61 billion in 2024, increasing to \$3.02 billion in 2025, with a compound annual growth rate (CAGR) of 15.9%. This growth over the historic period is due to several factors,



Expected to grow to \$5.40 billion in 2029 at a compound annual growth rate (CAGR) of 15.6%"

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including the rising demand for off-grid refrigeration in rural settings, an uptick in adoption of storage solutions powered by renewable energy, the expansion of agricultural exports which need dependable cooling, a rise in government initiatives that foster sustainable cold chains, the development of perishable food distribution networks, and an amplified emphasis on curbing post-harvest food wastage.

Forecasted to experience a significant surge in the coming years, the solar powered cold storage market is set to balloon to a value of \$5.40 billion by 2029, growing at a compound annual growth rate (CAGR) of 15.6%. Factors contributing to this growth during the projected period include the augmenting investment in decentralized cold storage facilities, the principal focus on sustainable food supply chains, the burgeoning integration of solar energy in agricultural setups, a boost in rural electrification and green energy initiatives, and the expansion in the horticulture and fisheries sector that has high demands for temperature-controlled logistics. Another contributing factor is the increasing international emphasis on carbon-neutral storage solutions. The primary trends anticipated during the outlook period comprise technological progress in hybrid solar-battery cold storage systems, advancements in efficient energy management and

temperature surveillance, innovations in the design of module and transportable cold storage units, developments in phase change materials facilitating extended cooling durations, research and improvements in energy-efficient solar panels for refrigeration, along with innovations in remote monitoring and data-led maintenance systems.

Download a free sample of the solar powered cold storage market report:

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### What Are The Factors Driving The Solar Powered Cold Storage Market?

The solar powered cold storage market is expected to grow as a result of increased demand for energy-efficient and sustainable refrigeration solutions. These cooling solutions are engineered to curb energy usage and decrease greenhouse gas emissions by utilizing advanced technologies and environmentally-friendly refrigerants. The urge to adopt such systems is increasing due to stringent environmental regulations imposed to restrict greenhouse gas emissions, forcing industries to adopt low-emission and energy-efficient refrigeration technologies. In keeping with sustainable and energy-efficient refrigeration options, solar powered cold storage systems use renewable solar energy to provide cost-effective, low-emission, and eco-friendly cooling. For example, as reported by the US-based Environmental Protection Agency (EPA) in September 2024, the GreenChill program included more than 13,500 supermarket stores, which equates to approximately 30% of all U.S. supermarkets, and over 900 certified stores with energy efficient refrigeration systems. This represents a 10% increase from the statistics reported in 2023. Consequently, the escalating demand for eco-friendly and energy-efficient refrigeration solutions is boosting the solar powered cold storage market.

### Who Are The Major Players In The Solar Powered Cold Storage Market?

Major players in the Solar Powered Cold Storage Global Market Report 2025 include:

- Haier Group Corporation
- Murugappa Group ( through PLUSS Advanced Technologies Ltd )
- Energy Efficiency Services Limited (EESL)
- Ecozen Solutions Private Limited
- Koolboks Incorporated
- Dulas Ltd.
- Inficold Private Limited
- BoxPower Incorporated
- Aldelano Solar Solutions Incorporated
- Ice Make Refrigeration Limited

### What Are The Key Trends And Market Opportunities In The Solar Powered Cold Storage Sector?

In their efforts to enhance energy efficiency and continuous cooling reliability, major players in the solar-powered cold-storage market are increasingly integrating sophisticated technologies like ice-storage thermal battery systems. These cutting-edge thermal energy storage systems allow excess solar energy to be stored as ice throughout the day, which can then be utilised as

cooling energy once the sun has set, facilitating prolonged off-grid functioning while also minimising reliance on batteries. For instance, the off-grid solar refrigeration solutions provider from France, Koolboks, launched a solar-powered refrigerator integrated with an ice-storage thermal battery system in November 2023. Specifically designed for remote and off-grid areas, this appliance features solar photovoltaic (PV) modules, a lithium-ion battery as backup, and an ice storage compartment which promises up to four days of cooling without the need for sunlight. This ground-breaking refrigerator offers enhanced cold-chain reliability, operational efficiency, and affordability to users in outlying and rural locations.

Which Segment Accounted For The Largest [Solar Powered Cold Storage Market Share](#)?

The solar powered cold storage market covered in this report is segmented –

- 1) By Type: Photovoltaic Operated Refrigeration Cycle, Solar Mechanical Refrigeration, Absorption Refrigeration
- 2) By Component: Solar Panels, Batteries, Refrigeration Units, Controllers, Other Components
- 3) By Application: Agriculture, Food And Beverage, Pharmaceuticals, Chemicals, Other Applications
- 4) By End-User: Farmers, Food Distributors, Hospitals And Clinics, Retailers, Other End-Users

Subsegments:

- 1) By Photovoltaic Operated Refrigeration Cycle: Direct Current (DC) Solar Powered Refrigeration Systems, Battery-Assisted Solar Refrigeration Units, Grid-Integrated Photovoltaic Refrigeration Systems, Hybrid Solar Photovoltaic Cooling Units
- 2) By Solar Mechanical Refrigeration: Solar Thermal Mechanical Compression Systems, Solar Engine Driven Refrigeration Units, Stirling Cycle Solar Refrigeration Systems, Rankine Cycle Solar Cooling Systems
- 3) By Absorption Refrigeration: Solar Ammonia Absorption Refrigeration Systems, Solar Lithium Bromide Absorption Units, Single-Effect Absorption Cooling Systems, Double-Effect Absorption Cooling Systems

View the full solar powered cold storage market report:

<https://www.thebusinessresearchcompany.com/report/solar-powered-cold-storage-global-market-report>

What Are The Regional Trends In The Solar Powered Cold Storage Market?

In the Solar Powered Cold Storage Global Market Report 2025, Asia-Pacific led the market as the largest and fastest-growing region in 2024. The report includes thorough coverage of regions namely Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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