

Non-Concentrating Solar Collector Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Absorber Plates (Copper, Aluminum, and Steel Plates), By Application (Residential, Commercial, and Industrial), By Region & Competition, 2021-2031F

<https://marketpublishers.com/r/N0AEE457E461EN.html>

Date: January 2026

Pages: 180

Price: US\$ 4,500.00 (Single User License)

ID: N0AEE457E461EN

Abstracts

The Global Non-Concentrating Solar Collector Market is projected to escalate from a valuation of USD 12.39 Billion in 2025 to USD 24.97 Billion by 2031, reflecting a compound annual growth rate of 12.39%. This market is characterized by the manufacturing and installation of flat-plate and evacuated tube collectors, which harness both diffuse and direct solar radiation to produce thermal energy without reliance on optical concentration. The sector's expansion is intrinsically anchored by stringent government regulations aimed at decarbonization and a critical focus on energy security, pushing nations to diversify their heating resources away from fossil fuels. These factors act as structural drivers rather than fleeting market fads, signifying a durable policy transition toward sustainable infrastructure across both industrial and residential landscapes.

However, the industry confronts substantial hurdles stemming from fierce competition with electrified heating solutions, most notably heat pumps, which are gaining market dominance due to their ability to provide both heating and cooling. This competitive dynamic creates a challenging environment for thermal technologies, even amidst their high efficiency. As reported by Solar Heat Europe, the global solar thermal sector achieved a newly installed capacity of approximately 21 gigawatts-thermal in 2023, highlighting the scale of the market despite these prevailing headwinds.

Market Driver

The establishment of favorable government incentives for renewable heating constitutes a fundamental structural catalyst for the Global Non-Concentrating Solar Collector Market. As nations increasingly enact decarbonization laws, a secure investment climate is emerging that favors the deployment of flat-plate and evacuated tube collectors over traditional fossil-fuel systems. This regulatory drive is especially pronounced within the European Union, where revised directives obligate member states to rapidly decarbonize their thermal industries. Citing the 'Solar Thermal Market Outlook 2024/2025' released by Solar Heat Europe in October 2025, the sector's enduring expansion is supported by the Renewable Energy Directive, which mandates a binding annual increase of at least 0.8 percentage points in the share of renewable energy used for heating and cooling, a framework crucial for ensuring consistent demand and de-risking major projects.

In parallel, the rising adoption of solar thermal technology for industrial process heat (SHIP) serves as a vital expansion mechanism as manufacturers aim to alleviate fluctuating fuel prices and adhere to rigorous emission standards. This movement represents a transition toward large-scale industrial applications where non-concentrating collectors supply low-to-medium temperature heat for industries like mining and food processing. According to the 'Solar Heat Worldwide 2025' report published by the International Energy Agency Solar Heating and Cooling Programme (IEA SHC) in June 2025, this industrial demand led to the commissioning of 106 new solar process heat facilities globally in 2024, contributing 120 megawatts of thermal capacity. Further underscoring this robust market backdrop, the German Solar Association (BSW-Solar) noted in its March 2025 'Statistical Data on the German Solar Heating Market' that roughly 26,000 new solar thermal units were installed across Germany throughout 2024.

Market Challenge

The Global Non-Concentrating Solar Collector Market faces critical obstacles due to the rapid uptake of electrified heating substitutes, with heat pumps posing a particular threat. This competitive disadvantage stems from the operational flexibility of heat pumps, which deliver both heating and cooling functions in one system, whereas solar thermal collectors are limited to heat generation. With construction preferences and government strategies increasingly prioritizing complete electrification to streamline building infrastructure, the requirement for standalone solar thermal systems is diminishing. Consequently, both residential consumers and industrial operators are

increasingly foregoing solar thermal expenditures in favor of all-encompassing heat pump solutions that integrate more seamlessly with modern, grid-interactive energy frameworks.

This shift in capital allocation toward electrification has precipitated a quantifiable decline in market performance. As detailed in the 2025 annual report by the International Energy Agency Solar Heating and Cooling Programme (IEA SHC), the global annual installed capacity of solar thermal systems experienced a 14% reduction in 2024 relative to the preceding year. This substantial downward trajectory underscores the extent to which widespread competition from electrified heating technologies is directly undermining the available market share for conventional non-concentrating solar collectors.

Market Trends

The emergence of Hybrid Photovoltaic-Thermal (PVT) collectors marks a major technological fusion, effectively resolving the spatial conflict between solar thermal and photovoltaic systems on rooftop surfaces. By simultaneously producing thermal energy and electricity from a single unit, PVT systems maximize energy output per square meter, rendering them highly appealing for commercial and residential structures seeking Net Zero certification despite limited space. This dual-functionality provides a robust defense against the market displacement caused by separate photovoltaic installations paired with electrified heating. As highlighted in the 'Global PVT market in transition' article by Solarthermalworld in July 2025, this renewed demand was confirmed by the global installation of 72,544 square meters of new PVT collectors in 2024, indicating a strong market recovery for this technology.

Concurrently, the market is undergoing a strategic evolution toward the expanded implementation of solar district heating equipped with seasonal storage, shifting focus from individual building units to municipal-level infrastructure. Cities are increasingly incorporating massive collector fields into district heating grids, frequently combined with seasonal thermal energy storage to reserve heat generated in summer for winter consumption, thereby drastically lowering dependence on fossil fuel networks. This utility-scale model enables higher solar contributions to urban heating supplies and offers protection against energy price volatility for entire communities. According to the 'Solar Heat Worldwide 2025' report by the IEA Solar Heating and Cooling Programme (IEA SHC) released in June 2025, this momentum led to the commissioning of ten new solar district heating projects worldwide in 2024, adding a total capacity of 74 megawatts to the existing network.

Key Market Players

Soltec Power Holdings S.A.

Viessmann Werke GmbH & Co. KG

Bosch Thermotechnik GmbH

GREENoneTEC Solarindustrie GmbH

Vaillant GmbH

Apricus Solar Co., Ltd.

Phoenix Solar Thermal Inc

SunMaxx Solar

ABB Ltd

Solimpeks

Report Scope

In this report, the Global Non-Concentrating Solar Collector Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Non-Concentrating Solar Collector Market, By Absorber Plates

Copper

Aluminum

Steel Plates

Non-Concentrating Solar Collector Market, By Application

Residential

Commercial

Industrial

Non-Concentrating Solar Collector Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Non-Concentrating Solar Collector Market.

Available Customizations:

Global Non-Concentrating Solar Collector Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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