Concentrated Solar Power (CSP) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 190 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

The Concentrated Solar Power Market size is estimated at 11.08 gigawatt in 2025, and is expected to reach 15.49 gigawatt by 2030, at a CAGR of 6.93% during the forecast period (2025-2030).

Key Highlights
- Over the long term, the declining cost of concentrated solar power technologies is expected to drive the market.
- On the other hand, the increasing adoption of solar photovoltaics and other renewable technologies is expected to hinder the market growth during the forecast period.
- Nevertheless, technology improvements and integration of concentrated solar power in hybrid power plants. This will positively impact the environment, and climate change is expected to create several opportunities for Concentrating the solar power market in the future.
- Europe is expected to dominate the market as the solar sector in the region is witnessing new projects at the outset of growing electricity demand and focusing on using renewable energy sources to curb pollution levels, therefore resulting in increasing demand for CSP during the forecast period.

Concentrated Solar Power (CSP) Market Trends

Parabolic Trough Segment to Dominate the Market

- Parabolic-trough collectors (PTCs) consist of long U-shaped mirrors with a linear axis tracking system. The mirrors reflect direct

solar radiation along their focal line, where an absorber tube is located. The receiver/absorber tube is made of steel. It has a selective coating that maintains high absorbance in the solar spectrum wavelength range but high reflectance in the infrared spectrum (i.e., it emits as little as possible).
- The most commonly used fluid is thermal oil, although water/steam or molten salt are also used for this configuration. These are some of the most widely deployed configurations for CSPs.
- Parabolic trough collectors are one of the most commonly deployed CSPs around the globe; they can be deployed in domestic heating, desalination, refrigeration systems, industrial heat, power plants, pumping irrigation water, etc. According to the National Renewable Energy Laboratory (NREL), as of June 2022, Parabolic trough accounts for a share of 63.5% of total global CSP installed capacity.
- The Parabolic Trough Collector (PTC) 's operations and maintenance part is slightly complicated compared to its counterparts. The most frequent activities related to solar field operations and maintenance are the periodic measurement of mirror reflectivity and washing. Mirror reflectivity directly affects the amount of valuable thermal energy solar collectors deliver. It may also require tall vehicles or cranes to perform routine cleaning and maintenance.
- For instance, in 2020, researchers from the Indian Institute of Technology Madras created a low-cost Solar Parabolic Trough Collector (PTC) device for concentrating solar energy for industrial uses such as desalination, space heating, and space cooling. This system, created and developed in India, is lightweight and highly efficient under various climate and load circumstances.
- Hence, the parabolic trough is expected to dominate the market for concentrated solar power during the forecast period.

Europe to Dominate the Market

- In Europe, the power sector accounts for more than 75% of greenhouse gas emissions in the region. Increasing the share of renewable energy has become a potential option for the region to tackle climate change.
- The solar sector is witnessing new projects at the outset of growing electricity demand and focusing on using renewable energy sources to curb pollution levels across the region. In 2022, Europe had about 2.3 GW of installed CSP capacity. As per IRENA, by 2030, Europe will likely install 4 GW of concentrated solar power (CSP)
- In Europe, Energy cooperation such as MUSTEC or Market Uptake of Solar Thermal Electricity intends to focus on the collaborative development of CSP projects in the region, given the EU 2030 climate and energy framework. MUSTEC aims to deploy CSP projects in Southern Europe to meet the electricity demand of Central and North European countries.
- Likewise, the EU Solaris ERIC, the European Research Infrastructure for CSP/Solar thermal energy, aims to develop CSP research-related activities and applications. The development of tools and techniques, new capacities, solutions, everyday standards, and protocols to ramp up CSP technology in the region.
- Further, in 2022, the German government introduced a 55% subsidy to install CSP to speed up the clean energy transition to green heating for industrial applications. It also envisages lowering payback time to below three years for CSP technology. This would significantly help CSP installations to increase in Germany.
- Similarly, Spain was the first European country to initiate feed-in-tariff mechanisms for CSP in 2002, which helped ramp up CSP deployment. Moreover, in 2007, Spain commissioned the PS10 solar power tower as the first commercial CSP plant to use tower technology worldwide.
- Further, in 2022, the Ministry of Ecological Transition, Spain, awarded 220 MW capacity for CSP installation through an auction mechanism that would give rise to the development of CSP projects in the country. Spain's government also announced to float tenders for 600 MW of CSP capacity by 2025.
- Hence, with the increasing installed capacities, Europe is expected to dominate the CSP market during the forecast period.

Concentrated Solar Power (CSP) Industry Overview

The concentrated solar power (CSP) market is moderately consolidated. Some of the key players in this market (in no particular order) include Aalborg CSP, Acciona SA, ACWA Power, Brightsource Energy Inc., and Engie SA., among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

Concentrated Solar Power (CSP) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 190 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2025-05-06
		Signature