Concentrated Solar Power (Csp) Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 125 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 (CSP) market is expected to register a CAGR of more than 7.5% during the forecast period (2022-2027). The COVID-19 pandemic disrupted the market temporarily, as it led to lockdowns and resulted in difficulties in sourcing equipment for the active projects. The lockdown also resulted in the shutdown of commercial and industrial facilities, causing the electricity demand to dip and affecting the operation of existing facilities. In terms of the market's growth, the declining cost of CSP components and increased adoption of renewable energy sources to limit emissions may drive the concentrated solar power market during the forecast period. However, the rapid decline in installation costs of solar photovoltaic (PV) plants and increased capacity factors have improved the economic competitiveness of solar photovoltaic (PV) projects worldwide. This factor makes CSP less lucrative than solar PV due to several drawbacks, including high CAPEX, OPEX, and its limitation to utility scale. Such factors are expected to hinder the market for CSP during the forecast period.

Key Highlights
The molten salt technology is expected to dominate the market during the forecast period. This technology accounts for 75% of the projects and can dispatch electricity outside peak sunshine hours.
The Middle-Eastn region is expected to provide opportunities for the CSP market due to the planned investment focused on mobilizing concessional financing and grants to help CSP scale up in the region, coupled with abundant solar resources.
Europe dominates the concentrated solar power market, with most of the demand coming from Spain, Germany, and the United Kingdom.

Concentrated Solar Power Market Trends

Molten Salt Segment to Dominate the Market

Molten salts of sodium and potassium are used as heat transfer fluid in CSP plants due to their capability to operate at temperatures beyond 500□C. They improve power efficiency to about 40% and reduce the levelized cost of electricity (LCOE). However, due to the comparatively low freezing point of about 250□C, a high amount of auxiliary power is required during shut-off periods to keep them in the molten state.

Molten salt technology accounts for 75% of the thermal energy storage developed for electricity applications worldwide. These applications also support CSP projects and dispatch electricity outside peak sunshine hours.

Several projects of such technology type are underway due to declining CSP costs and an increasing shift toward renewable energy sources to contain emissions. In 2015, the installed CSP capacity stood at 4750 MW, which rose by 6379 MW in 2020.

In February 2022, the Redstone Concentrated Solar Power Project, South Africa's largest renewable energy investment, achieved its first debt drawdown. The project is led by ACWA Power, Central Energy Fund, Pele Green Energy, and the local community. The plant is based on the molten salt technology, where the solar energy will be channeled from the heliostats to heat the molten salt in the tower located at the center. The plant is expected to start operating by the end of 2023.

Also, in September 2021, China started constructing the USD 3 billion Golmund Project, which consists of a CSP, PV, and thermal storage, collectively accounting for 3.3 GW. The molten salt CSP plant's planned capacity is 300 MW. The project is likely to be completed by the end of 2025.

Hence, the molten salt heat transfer fluid is expected to dominate the market for concentrated solar power during the forecast period.

Europe to Dominate the Market

European countries receive a significantly high number of hours of sunshine. The region primarily had an essential role in the development of solar power. Substantial prices for grid-connected solar power were provided to encourage the industry.

Based on current costs and market frameworks, Europe's installed CSP capacity may increase from 2.3 GW at the end of 2020 to 4 GW by 2030, based on c

In Europe, Spain has been leading the CSP market after the United States, driven by the country's government schemes and feed-in tariffs.

The country has been the world's largest market for concentrated solar power installation since 2010. The whole concentrated solar thermal power plants in the region accounted for 37% of total installed capacity in the world in 2020.

In November 2021, the European Commission approved the EUR 2.27 billion, a three-year incentive program planned by Greece to drive the deployment of more renewable energy generation capacity. The program is set to run until 2025, and the Greek government aims to achieve 4.2 GW of renewable generation capacity. The program includes concentrated solar power technology and solar PV, wind, biogas, biomass, landfill, etc.

Furthermore, in November 2021, SENER Renewable Investments launched the first hybrid solar project in Spain that merges CSP technology with molten salt storage and photovoltaic technology. In its current configuration, the Solgest-1 plant has a CSP unit with a storage capacity of more than 6 hours and a gross power generation of 110 MWe, making it capable of generating electricity at night or in cloudy weather.

In October 2021, the Ministry for the Ecological Transition and Demographic Challenge, Spain, planned to launch a third renewable auction for the solar thermal, biomass, and other technologies complying with the auction calendar announced last year. The Spanish government plans to put into place 200 MW of CSP.

Hence, with the increasing installed capacities, Europe is expected to dominate the CSP market during the forecast period.

Concentrated Solar Power Market Competitor Analysis

The concentrated solar power (CSP) market is consolidated. Some of the key players in this market include Abengoa SA, Acciona SA, ACWA Power, Brightsource Energy Inc., and Engie SA.

Additional Benefits:

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

Table of Contents:

Concentrated Solar Power (Csp) Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 125 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	2025-06-25
		Signature