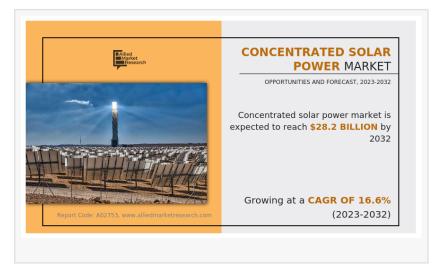


Concentrated Solar Power Market Trends: Rising Demand for Renewable Energy

Concentrated Solar Power Market – Global Growth Rate of 16.6% | Asia Pacific CAGR of 17% by Japan, Singapore, Australia, South Korea, India, China, Taiwan

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According to a new report published by Allied Market Research, The <u>concentrated solar power (CSP) market</u>



size was valued at \$6.1 billion in 2022, and is estimated to reach \$28.2 billion by 2032, growing at a CAGR of 16.6% from 2023 to 2032.

Concentrated Solar Power (CSP) is a renewable energy technology that converts sunlight into

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Hybridization and system integration are the upcoming trends of the concentrated solar power market in the world." *Allied Market Research* electricity by using mirrors or lenses to concentrate sunlight onto a small area. This concentrated sunlight produces heat, which drives a conventional turbine or engine to generate electricity.

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Asia-Pacific is the fastest growing region representing 17% of CAGR in the concentrated solar power market forecast.

The rise in awareness of environmental issues such as climate change and air pollution drives the need for cleaner energy sources. CSP low carbon footprint and minimal environmental impact make it an attractive choice for countries aiming to reduce emissions.

Key players in the <u>concentrated solar power industry report</u> include Aalborg CSP, Acciona, ACWA Power, Atlantica Sustainable Infrastructure plc., Brightsource, FRENELL GMBH, General Electric,

Rioglass Solar Inc., Sener, and Siemens Energy AG. These include Abengoa Solar, SolarReserve, TSK Flagsol Engineering GmbH, Schott AG, Therminol, Cobra Group, Idhelio, Novatec Biosol, and Enel Green Power.

CSP systems utilize various technologies such as parabolic troughs, power towers, dish/engine systems, or linear Fresnel reflectors to concentrate solar energy. Notably, CSP often incorporates thermal energy storage, allowing electricity generation even when the sunlight is not able to produce electricity.

Governments incentivize CSP projects through grants, subsidies, and loans. These incentives aim to offset the high initial costs associated with building solar power plants.

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In addition, governments streamline regulatory processes such as permitting procedures and grid interconnection guidelines, to facilitate the development and integration of CSP plants.

Government-sponsored research and development initiatives serve as vital catalysts for technological innovation and advancement within the CSP sector. All these factors increase the demand for a concentrated solar power industry during the forecast period.

CSP systems involve intricate technologies like parabolic troughs, power towers, or dish/engine systems. The construction and installation of these systems such as mirrors, receivers, heat transfer fluids, and thermal storage, contribute to higher initial costs compared to other renewable energy technologies.

CSP plants require large land areas to accommodate the solar collectors and associated infrastructure. Building at scale often involves significant land procurement expenses, especially in regions with high direct sunlight, where land costs are substantial.

Integration of CSP with other renewables like photovoltaic or wind power forms hybrid power plants. This combination offset the limitations of individual technologies by leveraging the inherent strengths of each. Combining these sources through grid integration maximizes the overall power output, smoothing fluctuations and ensuring a more consistent and reliable energy supply.

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By end-use industry, the market is divided into residential, commercial, and industrial. The residential segment is anticipated to grow at the fastest CAGR of 17.1% during the forecast period. CSP systems at a residential scale offer the potential for greater energy independence. Homeowners vawastelue having a self-sufficient energy source, reducing reliance on centralized

power grids and fossil fuels.

The industrial segment was the highest revenue contributor to the market accounting for half of the <u>CSP market share</u> in 2022.

By technology, the market is segmented into parabolic trough, solar power tower, Fresnel reflectors, and dish stirling. The Fresnel reflectors segment is anticipated to grow at the fastest CAGR of 17.6% during the forecast period.

Economic crises

Economic downturns have a substantial impact on investments in renewable energy projects, including concentrated solar power. The uncertainties and financial constraints during these periods often deter potential investors or project developers from committing capital to CSP infrastructure. This hesitancy results in a slowdown in the growth and expansion of the CSP market.

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Moreover, during economic crises, businesses and individuals tend to reassess their expenses, emphasizing cost-saving measures. While CSP solutions promise long-term benefits in terms of energy efficiency and sustainability, the substantial initial investment required poses a challenge, especially in financially challenging times.

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