Concentrated Solar Power Market to Hit $28.2 Bn by 2032 Driven by Clean Energy Demand

Concentrated solar power market expands as nations accelerate renewable deployment, driven by storage benefits and rising utility-scale solar investments.

WILMINGTON, DE, UNITED STATES, November 19, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research Concentrated Solar Power Market Size, Share, Competitive Landscape and Trend Analysis Report, by Technology (Parabolic Trough, Solar Power Tower, Fresnel Reflectors, Dish Stirling), by End Use Industry (Residential, Commercial, Industrial): Global Opportunity Analysis and Industry Forecast, 2022 - 2032, The global concentrated solar power market size was valued at $6.1 billion in 2022, and is projected to reach $28.2 billion by 2032, growing at a CAGR of 16.6% from 2023 to 2032.

The global Concentrated Solar Power market is witnessing steady growth as countries increasingly shift toward renewable and dispatchable energy sources. CSP systems use mirrors to concentrate sunlight and generate heat, enabling efficient electricity production and offering the advantage of integrated thermal energy storage for round-the-clock supply. This capability positions CSP as a vital complement to photovoltaic (PV) technologies, especially in regions with high solar irradiation.

Growing investment in utility-scale solar projects, supportive government incentives, and the need to reduce carbon emissions are strengthening CSP adoption worldwide. The market is increasingly attracting project developers, utilities, and technology providers as advancements in storage materials, heliostat fields, and hybridization with PV improve system performance and reduce levelized cost of electricity (LCOE).

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Increasing global emphasis on clean energy transition is a major factor driving the CSP market. Governments across the Middle East, Africa, Europe, and Asia are prioritizing CSP as part of long-term decarbonization strategies, supported by favorable policies, tenders, and renewable energy targets. These initiatives are enabling a strong pipeline of large-scale CSP installations.

Technological advancements are also shaping market growth. Improvements in molten salt storage systems, mirror accuracy, and high-temperature receivers are enhancing plant efficiency

and thermal output. Innovations such as hybrid CSP-PV systems and supercritical CO□ power cycles are further expanding commercial viability.

Despite strong potential, high capital costs remain a major challenge for widespread CSP adoption. The market still faces competition from low-cost photovoltaic systems, which often attract greater investment due to shorter installation timelines and falling module prices. Financing complexities and long project development periods also pose hurdles.

On the other hand, CSP's ability to provide dispatchable renewable energy makes it uniquely valuable for grid stability. Integrated thermal storage enables uninterrupted power delivery during peak evening demand, a key advantage over PV and wind. Countries with high solar resources increasingly view CSP as strategic infrastructure for energy security.

Growing interest in hybrid renewable systems, green hydrogen production, and industrial process heat is opening new opportunities for CSP developers. As industries seek to decarbonize thermal processes, the high-temperature heat output from CSP plants unlocks new applications beyond power generation.

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The concentrated solar power market is categorized by technology, end-use industry, and region. Based on technology, it includes parabolic trough, solar power tower, Fresnel reflectors, and dish Stirling systems. Among these, the Fresnel reflectors segment is projected to register the fastest growth, advancing at a CAGR of 17.6% over the forecast period.

By end-use, the concentrated solar power market is segmented into residential, commercial, and industrial sectors. The residential segment is expected to register the fastest CAGR of 17.1% during the forecast period. Residential-scale CSP systems provide homeowners with greater energy independence, allowing them to generate their own electricity and reduce reliance on centralized grids and fossil fuels.

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Regionally, the market is assessed across North America, Europe, Asia-Pacific, and LAMEA. The Asia-Pacific region is projected to achieve the highest CAGR during the forecast period, driven by growing awareness of environmental issues such as climate change and air pollution. With its low carbon footprint and minimal environmental impact, CSP is emerging as a preferred renewable energy solution for countries committed to reducing emissions.

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Key players driving growth in the Concentrated Solar Power (CSP) market include Aalborg CSP,

Acciona, ACWA Power, Atlantica Sustainable Infrastructure plc., Brightsource, FRENELL GMBH, General Electric, Rioglass Solar Inc., Sener, and Siemens Energy AG. The report also outlines the major market drivers, restraints, and opportunities shaping the sector.

In addition to these leading companies, other significant participants in the CSP market include Abengoa Solar, SolarReserve, TSK Flagsol Engineering GmbH, Schott AG, Therminol, Cobra Group, Idhelio, Novatec Biosol, and Enel Green Power, reflecting a competitive and diverse industry landscape.

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- By technology, the solar power tower segment was the highest revenue contributor to the market accounting for more than half of the concentrated solar power market share in 2022.
- By end-use industry, the industrial segment was the highest revenue contributor to the market accounting for half of the concentrated solar power market share in 2022.
- By region, Asia-Pacific was the highest revenue contributor accounting for more than half of the concentrated solar power market share in 2022.
- Asia-Pacific is the fastest growing region representing 17% of CAGR in the concentrated solar power market forecast.

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