



China's solar concentrating thermal power generation





Overview

China has become a global leader in the development of concentrating solar thermal power (CSP), taking advantage of state support, localized supply chains, and integration within hybrid renewable energy bases. By mid-2025, China's installed CSP capacity reached 1.14 GW, with a pipeline exceeding 8. In South Africa, the long-delayed 100 MW Redstone project came online in 2024. In 2024, there was little commercial CSP activity outside of China. China is set to become the lead market for CSP. The 1-million-kilowatt integrated concentrated solar-thermal power (CSP) and photovoltaic (PV) energy demonstration project in Hami, in Northwest China's Xinjiang Uygur Autonomous Region, has commenced power generation and connected to the State Grid, a spokesperson from the Northwest Electric. China installed a record 315 GW (AC) of new solar capacity in 2025, lifting cumulative installed PV capacity to 1.2 TW and pushing non-fossil power sources past thermal generation for the first time. China's National Energy Administration (NEA) released its 2025 power sector statistics on Jan.



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[Mapping the concentrated solar power development in China: ...](#)

We comprehensively evaluate concentrated solar power (CSP) potential in China across four dimensions: geographical, technical, economic, and CO2 mitigation, and extend the analysis ...

[Blue Book of China's Concentrating Solar Power Industry 2024](#)

Concentrating solar power (CSP) systems, also known as solar thermal electricity (STE) systems, are systems that generate electricity by converting solar energy into thermal energy and then converting ...



CONCENTRATED SOLAR THERMAL POWER (CSP)

China's CSP market is growing rapidly, with some 8.1 GW of projects in various stages of development, construction and commissioning at the end of 2024 - more than the total installed capacity globally in ...

[Research Overview of Solar Thermal Power Technology in China](#)

Next, we analyzed current solar thermal projects connected to the grid in China, examining aspects such as investment costs, operational power generation and economic viability, as well as projects that ...



[The Blue Book of China's Concentrating Solar Power Industry 2024](#)

In the "Blue Book", it is stated that, in 2024, China's CSP industry made significant progress, the installed capacity of CSP plants continued to increase, the scope of application of CSP ...

[China's largest concentrated solar-thermal power ...](#)

The project will convert solar energy into thermal power during the day, enabling stable power generation for up to eight hours during nighttime.



[Concentrating Solar Thermal Power in China: 2025 Review and Outlook](#)

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[The Future of Concentrated Solar Power in](#)



China: Opportunities and

Concentrated solar power (CSP) is emerging as a pivotal technology in the global transition to renewable energy, particularly in China. As the world's largest energy consumer and ...



China adds 315 GW of solar in 2025 - pv magazine International

China installed a record 315 GW (AC) of new solar capacity in 2025, lifting cumulative installed PV capacity to 1.2 TW and pushing non-fossil power sources past thermal generation for the ...



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