

Molten Salt Thermal Energy Storage Market - Growth, Trends, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 115 pages | Mordor Intelligence

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Report description:

The Molten Salt Thermal Energy Storage Market is expected to grow at a CAGR of more than 1.50% over the forecast period.

The market was slightly affected by the outbreak of COVID-19 in terms of project delays. However, the market rebounded in 2021.

Key Highlights

Over the long term, factors such as an increase in electricity consumption, decreasing the cost per kilowatt for energy storage, and a push by governments for cleaner fuel are expected to boost the market.

On the other hand, the higher price of solar energy storage relative to fossil fuels is expected to restrain the market.

However, new types of molten salt are under the research and development stage, like an increase in the stabilization of molten salts with the use of metal chloride. Innovations in the sector can spell an opportunity for market players.

Molten Salt Thermal Energy Storage Market Trends

Parabolic Trough Segment to Dominate the Market

Parabolic troughs dominate the market as the method most used for storing energy in molten salt as they can concentrate solar energy more efficiently. Many projects are under, in 2021, under construction. With a decrease in the cost per kilowatt for molten salt stored electricity, it is expected to dominate the market in the forecast period.

The parabolic trough is among the most efficient method for molten salt storage, competing with solar power tower technology.

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Many different countries around the globe have 2021 already set up a parabolic trough molten solar energy storage system. As of 2021, Spain is the leading country in concentrated solar power installation, with an installed capacity of about 2,304 MW. Parabolic-trough solar concentrating systems are parabolic-shaped collectors made of reflecting materials. The collectors reflect the incident solar radiation onto the salt and raise the temperature to melt the salt. Different types of reflecting material and molten salt are under research, which can provide the required push to reduce the cost of the energy extracted from molten salt, which is expected to boost the market.

A parabolic trough molten salt solar plant is under construction in Gansu Province, China, with estimated energy generated of around 100 megawatts (MW). It has molten salt as the storage mechanism and can provide 7 hours of electricity without a source.

In October 2022, Abengoa won the 2022 Solar Project of the Year of Renewable Energy Award for the Noor 1 project, which comprises the construction of three solar fields (200 MW each) of parabolic trough collectors in the world's largest solar complex: the Mohammed bin Rashid Al Maktoum Solar Park (MBR), south of Dubai (United Arab Emirates).

Therefore, with the increase in demand for electricity and increasing efficiency of the molten salts and reflective material, it is expected that the molten salt thermal energy storage with the parabolic troughs expected to grow in the forecast period.

Asia-Pacific to be the Fastest Growing Market

Asia-Pacific is among the most significant users of molten solar energy plants and is expected to grow fastest in the forecast period. India and China are expected to lead in the market's growth.

The Asia-Pacific molten salt thermal energy storage market has grown the fastest in 2021 and is expected to continue its high growth rate in the coming yeell. The region consists of large countries below the Tropic of Capricorn, which enables the countries to use solar energy projects efficiently.

Gujarat Solar One is India's largest Parabolic Trough with a molten salt capacity of 9 hours. The thermal storage system used is a 2-tank indirect. More molten salt storage is expected to be expanded and built in the forecast period.

China is among the largest user of the molten salt energy storage system in the world. In July 2022, Xinhua Power Generation Company announced the commencement of the firm's 1 GW new solar energy project at Bozhou. The project includes 100 MW of tower CSP using molten salt as the thermal storage fluid, with 8 hours of storagandth 900 MW of PV.

Hence, molten salt thermal energy storage is expected to grow the fastest in the Asia-Pacific region in the forecast period due to an increased demand for electricity and government and private players' investmeninto in the sector.

Molten Salt Thermal Energy Storage Market Competitor Analysis

The Molten Salt Thermal Energy Storage Market is partially fragmented. Some of the key players in this market are (not in particular order) Yara International ASA, Acciona, S.A., Abengoa SA, BrightSource Energy, Inc., and SENER Grupo de Ingenieria, S.A.

Additional Benefits:

The market estimate (ME) sheet in Excel format
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