

Thermal Energy Storage - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2020 - 2029

Market Report | 2024-02-17 | 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 Thermal Energy Storage Market size is estimated at USD 1.12 billion in 2024, and is expected to reach USD 1.51 billion by 2029, growing at a CAGR of 6.25% during the forecast period (2024-2029).

The COVID-19 outbreak negatively impacted the market due to the industrial lockdowns and plummeted power demand in the power generation industry. The thermal energy storage industry players witnessed huge losses in their revenues. The ABENGOA company recorded a revenue of EUR 1,250 million for 2020, a 16% decline from EUR1,493 million in 2019. The thermal energy storage market is likely to boom in the future due to the increased demand for technology in the industrial sector for large-scale heating and cooling applications and the option for an eco-friendly method of saving energy for power generation during peak hours. However, the competition from other energy storage alternatives like battery energy storage is expected to hamper the market's growth in the future.

Key Highlights

- The power generation application is expected to witness significant growth during the forecast period due to the growing adoption of concentrated solar power (CSP) technology with thermal energy storage systems.
- The research and innovation endeavors to diversify the scope of the technology by the industry players and government organizations create ample opportunities for the market. Very recently, the European Union allotted funds for the technological advancement of thermal energy storage under the Horizon 2020 program.
- Europe is likely to grow faster during the forecast period due to the high demand for seasonal energy storage.

Thermal Energy Storage Market Trends

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Power Generation Expected to Witness Significant Growth

- The global installation of renewable power generation and energy security methods has accelerated the need for technologies like concentrated solar power (CSP) in solar power generation. These technologies are often used with thermal energy storage systems in the current scenario.
- The power generation through CSP sources is increasing significantly due to the increasing installation of CSP capacities globally. For instance, in 2022, the total installed CSP capacity was around 6.50 GW, which was 6.37 GW in 2021, as per IRENA. The growth in the technology application was witnessed in the industrial and commercial sectors. Several projects will be added to the solar CSP power generation portfolio, along with thermal energy storage systems.
- In January 2022, the Chinese government announced plans to build 11 CSP projects with thermal energy storage by 2024. The country's state-owned firms are expected to play a leading role in the upcoming projects in consortium with other industry players. They are gigawatt-scale mixed renewable energy projects to be added within two years.
- In June 2023, Vast Solar Pty awarded crucial engineering contracts for the VS1 CSP project in Australia to Worley. The project involves the construction of a 30 MW or 288 MWh CSP plant in Port Augusta, South Australia. This facility will utilize modular CSP tower v3.0 technology of Vast, intending to generate clean, dispatchable, and low-cost power with more than 8 hours of thermal energy.
- Due to these developments, the power generation segment is expected to occupy the largest market share during the forecast period.

Europe Expected to Witness the Highest Growth

- Europe has been installing various thermal energy storage systems for a decade in the urban districts of countries like Spain, Austria, and Northern and Central Europe. The major driver of such a strategic step is the high energy consumption during winters and exploring renewable ways of district heating.
- The region has planned even more large-scale thermal storage projects to meet the ever-growing seasonal and short-term storage demand, with most installations with molten salt technology and underground hot water tanks. They are expected to serve as multifunctional energy hubs for future district heating sources and other applications.
- In August 2022, Kyoto Group in Norway signed a letter of intent (LoI) with Glomma Papp, a cardboard manufacturer, to enter a supply agreement for Kyoto's thermal energy storage molten-salt-based solution, Heatcube. This system is expected to be commissioned in 2023.
- In January 2022, the European Union and the European Investment Bank chose Malta Inc., the grid-scale thermal energy storage provider, to execute the Sun2Store thermal energy storage project in Spain. It is a 1,000-MWh/ten-hour energy storage system combining pumped heat technology with molten salt. The project will likely be developed in partnership with Alfa Laval.
- Such developments are expected to boost the European thermal energy storage market significantly.

Thermal Energy Storage Industry Overview

The thermal energy storage market is moderately consolidated. Some of the key players (not in particular order) are BrightSource Energy Inc., Abengoa SA, Baltimore Aircoil Company, Terrafore Technologies LLC, and SR Energy.

Additional Benefits:

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

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

Table of Contents:

1 INTRODUCTION

- 1.1 Scope of the Study
- 1.2 Market Definition
- 1.3 Study Assumptions

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET OVERVIEW

- 4.1 Introduction
- 4.2 Market Size and Demand Forecast in USD, till 2028
- 4.3 Recent Trends and Developments
- 4.4 Government Policies and Regulations
- 4.5 Market Dynamics
 - 4.5.1 Drivers
 - 4.5.1.1 Increasing Demand for Technology in the Industrial Sector for Large-scale Heating and Cooling Applications
 - 4.5.1.2 Rising Demand for Energy Storage Systems
 - 4.5.2 Restraints
 - 4.5.2.1 Competition from Alternative Energy Storage Systems
- 4.6 Supply Chain Analysis
- 4.7 Porter's Five Forces Analysis
 - 4.7.1 Bargaining Power of Suppliers
 - 4.7.2 Bargaining Power of Consumers
 - 4.7.3 Threat of New Entrants
 - 4.7.4 Threat of Substitutes Products and Services
 - 4.7.5 Intensity of Competitive Rivalry

5 MARKET SEGMENTATION

- 5.1 Type
 - 5.1.1 Molten Salt
 - 5.1.2 Hot water
 - 5.1.3 Other Types
- 5.2 Application
 - 5.2.1 Power Generation
 - 5.2.2 Heating
 - 5.2.3 Cooling
- 5.3 Technology
 - 5.3.1 Sensible Heat Storage
 - 5.3.2 Latent Heat Storage
 - 5.3.3 Thermochemical Heat Storage
- 5.4 Geography
 - 5.4.1 North America

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 5.4.1.1 United States
- 5.4.1.2 Canada
- 5.4.1.3 Rest of North America
- 5.4.2 Europe
 - 5.4.2.1 Germany
 - 5.4.2.2 France
 - 5.4.2.3 United Kingdom
 - 5.4.2.4 Rest of Europe
- 5.4.3 Asia-Pacific
 - 5.4.3.1 China
 - 5.4.3.2 India
 - 5.4.3.3 Japan
 - 5.4.3.4 South Korea
 - 5.4.3.5 Rest of Asia-Pacific
- 5.4.4 South America
 - 5.4.4.1 Brazil
 - 5.4.4.2 Argentina
 - 5.4.4.3 Rest of South America
- 5.4.5 Middle East and Africa
 - 5.4.5.1 Saudi Arabia
 - 5.4.5.2 United Arab Emirates
 - 5.4.5.3 South Africa
 - 5.4.5.4 Rest of Middle East and Africa

6 COMPETITIVE LANDSCAPE

- 6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements
- 6.2 Strategies Adopted by Leading Players
- 6.3 Company Profiles
 - 6.3.1 BrightSource Energy Inc.
 - 6.3.2 Aalborg CSP AS
 - 6.3.3 Abengoa SA
 - 6.3.4 Baltimore Aircoil Company
 - 6.3.5 Burns & McDonnell
 - 6.3.6 SaltX Technology Holding AB
 - 6.3.7 Terrafore Technologies LLC
 - 6.3.8 Trane Technologies PLC
 - 6.3.9 SR Energy
 - 6.3.10 Vantaa Energy

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

- 7.1 Rising Research and Innovation Endeavors to Diversify the Scope of the Technology

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Thermal Energy Storage - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2020 - 2029

Market Report | 2024-02-17 | 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	2026-02-28
		Signature	

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com



Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com
www.scotts-international.com