

Thermal Energy Storage Systems Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025-2034

<https://marketpublishers.com/r/TD5B7FE66BCAEN.html>

Date: February 2025

Pages: 100

Price: US\$ 4,850.00 (Single User License)

ID: TD5B7FE66BCAEN

Abstracts

The Global Thermal Energy Storage Systems Market was valued at USD 54.4 billion in 2024 and is projected to expand at a 5.6% CAGR from 2025 to 2034. Growing electricity demand is a primary factor fueling market growth, with industries increasingly turning to thermal energy storage to optimize energy use and reduce costs. The rising adoption of energy management solutions across power generation, chemical processing, food and beverages, and HVAC industries is driving market expansion. These industries are integrating thermal storage to enhance efficiency and lower operational expenses, leading to a surge in global electricity consumption. The technology enables surplus energy storage during peak production periods, ensuring a stable supply when renewable sources are unavailable. With increasing energy production from wind and solar power, the need for reliable storage solutions continues to rise.

Thermal energy storage is a key enabler of grid stability, particularly as renewable energy adoption accelerates. Molten salt-based systems are becoming the preferred choice in energy storage due to their ability to provide consistent electricity output. Advancements in phase change materials, thermochemical storage, and molten salt solutions are further improving efficiency and storage capacity. Governments worldwide are implementing stringent energy efficiency regulations, directing significant investments into the sector. In 2023, Europe allocated over USD 105 billion toward renewable energy projects, reinforcing the demand for thermal storage solutions.

The molten salt segment is expected to surpass USD 94 billion by 2034, driven by the growing emphasis on renewable energy integration. Sensible heat storage accounted for over 98% of the market share in 2024 and is projected to expand further, supported

by increasing global energy consumption, industrialization, and urbanization. These factors continue to drive the need for efficient storage technologies worldwide.

Asia Pacific thermal energy storage market witnessed substantial growth, with valuations reaching USD 9.1 billion in 2022, USD 18.7 billion in 2023, and USD 25.1 billion in 2024. Rapid urbanization and industrial growth in developing countries are generating high electricity demand, bolstering the need for energy storage. Government policies and financial incentives are further accelerating thermal storage adoption as part of broader sustainability initiatives. Global commitments to carbon reduction and renewable energy expansion necessitate the deployment of large-scale storage systems, ensuring long-term market growth.

Contents

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Market definitions
- 1.2 Base estimates & calculations
- 1.3 Forecast calculation
- 1.4 Data sources
 - 1.4.1 Primary
 - 1.4.2 Secondary
 - 1.4.2.1 Paid
 - 1.4.2.2 Public

CHAPTER 2 EXECUTIVE SUMMARY

- 2.1 Industry synopsis, 2021 - 2034

CHAPTER 3 INDUSTRY INSIGHTS

- 3.1 Industry ecosystem analysis
- 3.2 Regulatory landscape
- 3.3 Industry impact forces
 - 3.3.1 Growth drivers
 - 3.3.2 Industry pitfalls & challenges
- 3.4 Growth potential analysis
- 3.5 Porter's analysis
 - 3.5.1 Bargaining power of suppliers
 - 3.5.2 Bargaining power of buyers
 - 3.5.3 Threat of new entrants
 - 3.5.4 Threat of substitutes
- 3.6 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

- 4.1 Strategic dashboard
- 4.2 Innovation & sustainability landscape

CHAPTER 5 MARKET SIZE AND FORECAST, BY STORAGE MATERIAL, 2021 – 2034 (USD MILLION, MW)

5.1 Key trends

5.2 Water

5.3 Molten Salt

5.4 PCM

5.5 Others

CHAPTER 6 MARKET SIZE AND FORECAST, BY TECHNOLOGY, 2021 – 2034 (USD MILLION, MW)

6.1 Key trends

6.2 Sensible Heat

6.3 Latent Heat

6.4 Thermochemical

CHAPTER 7 MARKET SIZE AND FORECAST, BY APPLICATION, 2021 – 2034 (USD MILLION, MW)

7.1 Key trends

7.2 Power Generation

7.3 District Heating & Cooling

7.4 Process Heating & Cooling

CHAPTER 8 MARKET SIZE AND FORECAST, BY END USE, 2021 – 2034 (USD MILLION, MW)

8.1 Key trends

8.2 Residential & Commercial

8.3 Utilities

8.4 Industrial

CHAPTER 9 MARKET SIZE AND FORECAST, BY REGION, 2021 – 2034 (USD MILLION, MW)

9.1 Key trends

9.2 North America

9.2.1 U.S.

9.2.2 Canada

9.3 Europe

- 9.3.1 Germany
- 9.3.2 UK
- 9.3.3 France
- 9.3.4 Italy
- 9.3.5 Spain
- 9.3.6 Russia
- 9.4 Asia Pacific
 - 9.4.1 China
 - 9.4.2 Japan
 - 9.4.3 India
 - 9.4.4 South Korea
 - 9.4.5 Australia
- 9.5 Middle East & Africa
 - 9.5.1 Saudi Arabia
 - 9.5.2 UAE
 - 9.5.3 South Africa
- 9.6 Latin America
 - 9.6.1 Brazil
 - 9.6.2 Argentina

CHAPTER 10 COMPANY PROFILES

- 10.1 Abengoa S.A.
- 10.2 Baltimore Aircoil Company
- 10.3 Burns & McDonnell
- 10.4 Caldwell Energy Company
- 10.5 CALMAC
- 10.6 Deepchill Solutions Inc.
- 10.7 DN Tanks
- 10.8 Dunham-Bush Limited
- 10.9 EVAPCO, Inc.
- 10.10 FAFCO, Inc.
- 10.11 Goss Engineering, Inc.
- 10.12 McDermott
- 10.13 New BrightSource, Ltd.
- 10.14 Siemens Gamesa Renewable Energy, S.A.
- 10.15 Steffes, LLC

I would like to order

Product name: Thermal Energy Storage Systems Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025-2034

Product link: <https://marketpublishers.com/r/TD5B7FE66BCAEN.html>

Price: US\$ 4,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/TD5B7FE66BCAEN.html>