

High Temperature Energy Storage (HiTES): Market Research Report

https://marketpublishers.com/r/H611379F554EN.html

Date: January 2015

Pages: 153

Price: US\$ 4,500.00 (Single User License)

ID: H611379F554EN

Abstracts

This report analyzes the Global market for High Temperature Energy Storage (HiTES) in US\$ Million by the following Battery Chemistries: Molten Salt, NaS (Sodium Sulfur), and NaMx (Sodium Metal Halide). Annual estimates and forecasts are provided for the period 2013 through 2020. Market data and analytics are derived from primary and secondary research. Company profiles are primarily based on public domain information including company URLs. The report profiles 36 companies including many key and niche players such as -

Abengoa Solar, S.A

ACCIONA Energy S.A.

Archimede Solar Energy

Areva S.A.S

Bertrams Heatec AG



Contents

I. INTRODUCTION, METHODOLOGY & PRODUCT DEFINITIONS

Study Reliability and Reporting Limitations
Disclaimers
Data Interpretation & Reporting Level
Quantitative Techniques & Analytics
Product Definitions and Scope of Study

II. A GLOBAL MARKET REPORT

1. INDUSTRY OVERVIEW

High Temperature Energy Storage: Technology with Lower CAPEX and Longer Lifespan

Table 1. High Temperature Energy Storage Technologies: Brief Details of Storage Type, Efficiency (%), Number of Cycles, Power Capacity, and Potential Duration

Sodium Batteries (NaS and NaMx): Advantages and Disadvantages Competitive Landscape Global Outlook

2. MARKET TRENDS, ISSUES & DRIVERS

Rising Prominence of Concentrated Solar Power (CSP) Worldwide: A Strong Growth Driver for Molten Salt Energy Storage

Table 2. Key Characteristics of Molten Salt Thermal Energy Storage Systems by TES Type

Table 3. Global Solar-Related Energy Storage Market by Technology (2014): Percentage Share Breakdown of Capacity Installations for Batteries, Flywheel, and Thermal (includes corresponding Graph/Chart)

Table 4. Global Solar-Related Battery Energy Storage Market by Type (2014):



Percentage Share Breakdown of Capacity Installations for Flow Batteries, Lead-Acid, Lithium-ion, and Sodium Batteries (includes corresponding Graph/Chart)

Table 5. Global Solar Thermal Power Capacity by Country (2013): Percentage Breakdown of Capacity Installations for Algeria, India, Spain, and the United States (includes corresponding Graph/Chart)

Growing Investments in CSP Projects Bodes Well for Molten Salt TES Systems

Table 6. Top Ten Countries Worldwide with the Highest Concentrated Solar Power Plant Capacities: 2013 (includes corresponding Graph/Chart)

Table 7. Cumulative Capacity Installations of Concentrated Solar Power over the Period 2005-2013 (includes corresponding Graph/Chart)

Table 8. Major Commercial Purpose, Operational CSP Plants Worldwide (2013): Brief Details of Country, Name of Plant, Capacity (MW), and CSP Technology

Andasol Solar Power Plant (Spain): The Leading Thermal Molten Salt Storage Project EU's Desertec to Offer Major Boost to Concentrated Solar Thermal Immense Potential for Molten Salts as Heat Transfer Fluids in CSP Plants Major Research initiatives in Molten Salt Storage Technology Reduction of Overall System Costs

Development of New Technology in CSP Plants

New Salt Mixture with Enhanced Heat Storing Capabilities

Probable Replacement Technologies for Molten Salt Storage in CSP Plants: A Cause for Concern?

Phase Change Materials (PCM) Systems

Sand

Increasing Focus on Renewable Energy Sources (RES): Opportunities Galore for Molten Salt Storage

Table 9. Targets for Electricity Production from Renewable Energy Sources Worldwide by Country

Table 10. Percentage of Renewable Sources in Electricity Production Worldwide by Country (includes corresponding Graph/Chart)



Table 11. Global Investments (US\$ Billion) in Renewable Energy by Source: 2013 (includes corresponding Graph/Chart)

Molten Salt Energy Storage Driven by the Steady Evolution of the Smart Grid Standard

Table 12. Global Spend on Smart Grid Technologies by Region (2014, 2017 & 2020): Cumulative Spending (in US\$ Billion) for Asia-Pacific (incl. China), Europe, Latin America, and North America (includes corresponding Graph/Chart)

Table 13. NaS and Molten Salt TES Storage Compared with Other Grid Storage Technologies

Dominance of Battery Technologies in Energy Storage Drives the NaS Batteries Market in the Near Term

Table 14. Global NaS Batteries Market by Application (2014): Percentage Share Breakdown of Capacity Installations for Load Levelling; Emergency Power Supply Application and Load Levelling Combined; Momentary Power Failure Application and Load Levelling Combined; Natural Energy; and Other Applications (includes corresponding Graph/Chart)

NaS Batteries: Maintaining High Temperature at All Times Lead to Higher Production Costs

Table 15. Various Energy Storage Technologies Ranked on the Basis of Cost (\$/KW) (includes corresponding Graph/Chart)

Table 16. Production Cost Breakdown (%) of a Typical NaS Battery Storage Plant (includes corresponding Graph/Chart)

Higher Energy Capacities and Durable Chemistry Drive Demand for NaMx Batteries

Table 17. NaMx Storage Type in Comparison with Other Storage Technologies in EV and Stationary Power Applications



Surging Microgrid Installations to Drive Growth for NaMx Batteries

Table 18. Global Energy Storage Capacity in Microgrids by Technology (2014): Percentage Share Breakdown of Capacity Installations for Advanced Lithium-ion, Advanced Lead-Acid, Advanced Flow Battery and Sodium Metal Halide (includes corresponding Graph/Chart)

Expanding Electric Vehicles Infrastructure to Boost Prospects for NaMx Batteries

Table 19. World Market for Electric Vehicles (2013): Percentage Breakdown of Unit Sales by Product Type (includes corresponding Graph/Chart)

Favorable Trends in Energy Production and Consumption Strengthens Market Prospects

Table 20. Global Electricity Consumption in TWh for Years 2000, 2015 & 2030 (includes corresponding Graph/Chart)

Table 21. Global Electricity Production by Country (2013): Percentage Breakdown of Electricity Production Volume for China, United States, India, Russia, Japan, Canada, Germany, Brazil, France, South Korea, and Others (includes corresponding Graph/Chart)

Table 22. Global Electricity Consumption by Country (2013): Percentage Breakdown of Electricity Consumption Volume for China, United States, Japan, Russia, India, Germany, Canada, Brazil, South Korea, France, and Others (includes corresponding Graph/Chart)

Table 23. Projected Global Demand for Primary Energy (Mtoe) and Electricity (MWh): 2015, 2020, 2025, 2030 & 2035 (includes corresponding Graph/Chart)

Table 24. Global Total Primary Energy Supply (Excluding Energy Stored in International Marine and Aviation Bunkers) in Units by Region (2013): Percentage Breakdown of Supply Volumes for OECD, China, Asia (excluding China), Non-OECD Europe and Eurasia, Africa, Middle East, and Non-OECD Americas (includes corresponding Graph/Chart)



Table 25. Investments in New Power Plants by Geographic Region (2012): Percentage Breakdown for Coal, Natural Gas, Oil, Nuclear Power, and Renewable Energy (includes corresponding Graph/Chart)

Table 26. Estimated Global Power Generation Infrastructure Requirement (in US\$ Billion) for China, India, Latin America, and North America over the Period 2010-2030 (includes corresponding Graph/Chart)

3. HIGH TEMPERATURE ENERGY STORAGE: A REGIONAL PERSPECTIVE

The United States

Renewable Energy and Energy Storage to Help Offset Escalating Electricity Cost Molten Salt Thermal Energy Storage: A Vital Component of the Solar Power Industry

Table 27. The US Grid Energy Storage Market by Technology (2014): Percentage Share Breakdown of Capacity Installations for Pumped Hydro Storage and Other Technologies (includes corresponding Graph/Chart)

Table 28. The US Grid Energy Storage Market by Technology Other than Pumped Storage (2014): Percentage Share Breakdown of Capacity Installations for CAES, Flywheels, Ice Thermal Storage, Li-ion, NaS Batteries, Ni-Cad Batteries and Others (includes corresponding Graph/Chart)

Strong Growth for Solar Energy to Drive Demand for Molten Salt Storage Technology

Table 29. Major Solar Projects in Development Phase in the US: Brief Details of Project Name, Capacity in MW, and Location (State) (includes corresponding Graph/Chart)

Favorable Policies Boosts Market Prospects for Solar Power Generation

Table 30. Power Plant Capacity Additions (MW) in the US by Type of Power: 2013 (includes corresponding Graph/Chart)

NYC Utility's Ambitious Plans for Energy Efficiency to Drive Market Growth



Table 31. Incentives under ConEd's Demand Management Program by Storage Technology

Japan

Increasing Focus on Renewable Energy Drives the HiTES Market Japanese Energy Market Overview

Europe

Key Growth Driving Factors in the European Energy Storage Market

Grid Level Storage Gains Momentum in Western Europe

Favorable Government Policies Benefit the German Energy Storage Market

Asia-Pacific: A Potential Laden Market

China: Booming Solar Industry Drives the Molten Salt Thermal Energy Storage Market Outlook for Energy Storage Market in China

India: Increasing Adoption of Renewable Energy Augurs Well for Market Expansion Technological Improvements for Realizing Cost Reductions: Need of the Hour South Africa

Energy Storage to Deliver Reliable and Affordable Electricity in South Africa

4. GLOBAL ENERGY STORAGE SOLUTIONS MARKET: A MACRO PERSPECTIVE

Energy Storage Technologies: Classification

Table 32. Global Energy Storage Market by Technology (2014): Percentage Share Breakdown of Installed Capacity for Traditional Pumped Storage and Other Technologies (includes corresponding Graph/Chart)

Table 33. Global Energy Storage Market by Technology Other than Pumped Storage (2014): Percentage Share Breakdown of Installed Capacity for Capacitor, Compressed Air, Flow Battery, Flywheel, Gravitational Storage, Lead Acid Battery, Li-ion, Molten Salt Energy and Others (includes corresponding Graph/Chart)

Table 34. Leading Energy Storage Technology Vendors Worldwide (2013): Percentage Market Share Breakdown Based on Capacity for Allis Chalmers, Alstom, CKD Blankso, Gridflex, Harbin, Hydrodynamics Group, Riverbank Power, Sichuan Dongfeng Electric, Voith and Others (includes corresponding Graph/Chart)

Table 35. Energy Storage Technologies: Key Features Comparison for PHS, CAES, Flywheel, NaS Battery, Li-ion Battery, Flow Battery, Supercapacitor, SMES, Molten Salt,



Hydrogen, and SNG Technology

Various Energy Storage Technologies: Key Advantages & Disadvantages Key Energy Storage Technologies & Applications for Electrical, Chemical, Electrochemical, Mechanical and Thermal Energy Investment in Energy Storage Projects Witness Steady Growth Worldwide

Table 36. Number of Energy Storage Projects by Country: 2014 (includes corresponding Graph/Chart)

Government Intervention Critical to Widespread Adoption of Energy Storage Technologies

Domestic Targets for Greenhouse Gas Emissions of Select Regions/Countries New Projects & Government Mandates

Incentives & Standards: Key to Promoting Energy Storage Technologies Microgrids to Drive Energy Storage in the Future

Table 37. A Glance at Largest Power Blackouts/ Outages Worldwide

Nanotechnology: The Future of Energy Storage?

Nanotubular Bulk Material with Ultra-Low Density for Energy Storage Applications

Research on for High Durability and Advanced Chemical Compositions

Characteristics of Select Battery Technology Types

5. PRODUCT OVERVIEW

Energy Storage: Introduction
High Temperature Energy Storage
Sodium Sulfur (NaS) Battery
Major Properties of NaS Batteries
NaS batteries—Chemistry
NaS Batteries—Construction and Operation
Safety Concerns
Major Applications of NaS Batteries
Grid Energy Storage Support
Space Applications
Heavy Machinery and Transport



Sodium Metal Halide (NaMx) Batteries (ZEBRA Batteries)
NaMx Battery Components
Operating Characteristics
Applications
Stationary Applications
Major stationary applications
Molten Salt Technology

6. RECENT INDUSTRY ACTIVITY

University of Evora and DLR of Germany Collaborate for Research in the Area of Molten Salt Storage for CSP Plants

SolarReserve Secures Environmental Approval for Copiapo Solar Project with Molten Salt Storage Technology

Acciona and Sener to Set up Kathu Solar Thermal Plant with Molten Salt Thermal Energy Storage

NGK Insulators NaS Electric Energy Storage System at Kashiwa-no-ha Smart City Becomes Operational

SolarReserve Takes Over CSP Division of Aerojet Rocketdyne, Reinforces Leadership in Solar Thermal Energy

NGK Insulators to Supply NAS Battery to Italian Transmission Grid NGK Insulator to Receive Government Subsidy for Research on NaS Battery Italian Enel Installs Molten Sat Receivers from Schott in its Molten Salt Solar Power Plant

7. FOCUS ON SELECT GLOBAL PLAYERS

Abengoa Solar, S. A. (Spain)

ACCIONA Energy S. A. (Spain)

Archimede Solar Energy

Areva S. A. S (France)

Bertrams Heatec AG (Switzerland)

BrightSource Energy, Inc. (US)

FZ SoNick (Switzerland)

General Electric Company (US)

Idhelio (France)

NGK Insulators, Ltd. (Japan)

Schott AG (Germany)

SENER Group (Spain)



Siemens AG (Germany)
SolarReserve, LLC. (US)
Sumitomo Electric Industries, Ltd. (Japan)
TSK Flagsol (Germany)

8. GLOBAL MARKET PERSPECTIVE

Table 38. World Recent Past, Current & Future Analysis for High Temperature Energy Storage (HiTES) by Technology - Molten Salt TES, NaS and NaMx Storage Markets Independently Analyzed with Annual Revenues in US\$ Millions for Years 2013 through 2020 (includes corresponding Graph/Chart)

Table 39. World 8-Year Perspective for High Temperature Energy Storage (HiTES) by Technology - Percentage Breakdown of Dollar Revenues for Molten Salt TES, NaS and NaMx Markets for Years 2013, 2015 & 2020 (includes corresponding Graph/Chart)

III. COMPETITIVE LANDSCAPE

Total Companies Profiled: 36 (including Divisions/Subsidiaries - 37)
The United States (7)
Japan (3)
Europe (22)
France (2)
Germany (6)
Italy (3)
Spain (5)
Rest of Europe (6)
Asia-Pacific (Excluding Japan) (4)
Africa (1)



I would like to order

Product name: High Temperature Energy Storage (HiTES): Market Research Report

Product link: https://marketpublishers.com/r/H611379F554EN.html

Price: US\$ 4,500.00 (Single User License / Electronic Delivery)

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

Service:

info@marketpublishers.com

Payment

First name: Last name:

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/H611379F554EN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

Email:	
Company:	
Address:	
City:	
Zip code:	
Country:	
Tel:	
Fax:	
Your message:	
	**All fields are required
	Custumer signature

& Conditions at https://marketpublishers.com/docs/terms.html

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970