

Utility Energy Storage Market Guide

https://marketpublishers.com/r/U42C5376E9AEN.html

Date: August 2012

Pages: 147

Price: US\$ 197.00 (Single User License)

ID: U42C5376E9AEN

Abstracts

This Utility Energy Storage Market Guide report provides a comprehensive assessment of the state-of-the-art for energy storage technology and describes how the marketplace will likely evolve.

This is a comprehensive guide to opportunities for electric utilities, developers and suppliers of storage technologies, and engineering firms that design and construct installations.

Applicability and benefits are discussed for each storage technology, key players are profiled, and existing installations are identified. The report also provides an easy-to-use graphic comparison of competing technologies, allowing the match-up of product categories with specific applications.

The electric utility energy storage market is projected to top \$2.5 billion by 2015. Eight technologies will compete head-to-head in this market including batteries, compressed air storage, flywheels, hydrogen, superconducting magnetic energy storage, thermal energy storage, ultracapacitors, and vehicle-to-grid.

This Utility Energy Storage report analyzes the various benefits of storage installations for electric utilities, such as improved reliability and power quality, meeting needle peaks in electricity usage, reduced need for added generation capacity, deferred T&D upgrade investment, and reduction of CO2 emissions. Because of the intermittent nature of their power generation, storage is particularly applicable to utility-scale solar and wind farm installations.



Contents

OVERVIEW OF ELECTRIC POWER GENERATION AND DISTRIBUTION SYSTEM:

Understanding Energy Storage Recent Developments Advanced Energy Storage Systems Popular Storage Methods

INTRODUCTION TO GRID ENERGY STORAGE:

Economics of Grid Energy Storage
Leveling the Load
Managing the Energy Demand
Portability Options
Reliability of Energy Storage Options
Global Utility Energy Storage Market Forecast
Storage Systems Used by Utilities

ROLE OF THE SMART GRID:

Market Drivers
Load Management
Peak Demand
Demand Growth
Power Quality and Reliability
Spinning Reserve
Renewable Power Integration
Wind Power Grid Integration
Tax Credits
BATTERIES

LEAD-ACID BATTERIES:

Construction
Applications of Lead Acid Batteries
Sulfation
Stratification
Safety Issues



LITHIUM-ION BATTERIES:

Construction
Formats
Safety Issues
METAL-AIR BATTERIES

SODIUM-SULFUR BATTERIES:

Construction
Safety Issues

VANADIUM-REDOX FLOW BATTERIES:

Operation
Applications & Installations
ZINC-BROMIDE FLOW BATTERIES

KEY TECHNOLOGIES IN BATTERY STORAGE:

Lead-Acid Batteries
Lithium-Ion Batteries
Metal-Air Batteries
Sodium-Sulfur Batteries
Vanadium-Redox Flow Batteries
Zinc-Bromide Flow Batteries

COMPRESSED AIR ENERGY STORAGE:

History of CAES
Types of CAES
Types of Systems
Hybrid Systems
Existing Hybrid Systems
Future Hybrid Systems
Lake or Ocean Storage
CAES Systems in Energy Storage
Comparing CAES with Batteries



Safety Issues

FLYWHEELS:

History of Flywheels Flywheel Energy Storage Flywheels in Utility Energy Storage

HYDROGEN:

Hydrogen and Energy Storage
PUMPED HYDROELECTRIC STORAGE
POTENTIAL TECHNOLOGIES

SUPERCONDUCTING MAGNETIC ENERGY STORAGE:

Advantages of SMES
Current Uses
Solenoid versus Toroid
Low-Temperature versus High-Temperature Superconductors
Economics of SMES
Challenges Facing SMES

THERMAL ENERGY STORAGE:

Economics of Thermal Energy Storage

ULTRACAPACITORS:

History of Ultracapacitors
Ultracapacitors & Energy Storage
Comparing Ultracapacitors to Batteries

VEHICLE-TO-GRID:

VG & Energy Storage Installations Skepticism



TECHNOLOGY COMPARISON:

Performance Comparisons

Ratings

Size & Weight

Capital Costs

Efficiency and Cycle Life

Per-Cycle Cost

Applications and Benefits

FINANCIAL BENEFITS:

Arbitrage

Reduced Cost for Transmission and Distribution Losses

Reduced Financial Losses from Improved Electric Reliability

Reduced Financial Losses from Improved Onsite Power Quality

Reduced Need for Generation Capacity

Renewables Value Enhancement

Power Generation Support

Enhanced Power Quality

Frequency Regulation

Load Following

Renewables Support

Transmission and Distribution Support

Asset Utilization

Avoided Congestion Charges

Deferred Upgrade Investment

Increased Load-Carrying Capacity

Life Extension

Substation Upgrade Deferral

End-User Benefits

Demand Charge Reduction

Time-of-Use Energy Cost Reduction

RISK ASSESSMENT:

Installation Economics

Monetizing Storage Benefits



I would like to order

Product name: Utility Energy Storage Market Guide

Product link: https://marketpublishers.com/r/U42C5376E9AEN.html
Price: US\$ 197.00 (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/U42C5376E9AEN.html

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

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

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

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