

## **Solar Storage 2013**

https://marketpublishers.com/r/S40096D18D5EN.html

Date: December 2012

Pages: 0

Price: US\$ 1,995.00 (Single User License)

ID: S40096D18D5EN

### **Abstracts**

This report provides a detailed analysis and forecast of the markets for energy storage for the solar industry with coverage of both the photovoltaics (PV) and concentrated solar power (CSP) sectors. Opportunities are identified for the full range of storage options including batteries, supercapacitors and mechanical systems. A lot has happened since NanoMarkets last examined this market. Perhaps most dramatically, small PV installations, which just a year ago would never have considered installing any kind of storage facility are now being pushed into buying batteries because of declining feed-in tariffs (FiTs) and other subsidy reductions. At the same time, utility-scale solar both PV and CSP - are also adopting strategies for large-scale storage solutions and in some cases such storage is even being mandated by government. Meanwhile, Smart Grid deployment is continuing to drive solar energy storage markets as grids find that they need storage a way of protecting the grid from the variability implicit in all solar generation technologies. This report also contains discussions of how the leading firms in the energy storage space are adapting their products and product strategies for solar markets. In addition, many examples are also given of solar installations that are using storage in ways that suggest new directions for revenue generation in this sector. Finally, this report assesses all the currently available storage technologies for the storage of solar generated power and determines how they can fit into solar industry landscape, both now and in the future. The report also quantifies all the major markets for solar-related energy storage in an eight-year market forecast in both volume and value terms. This market forecast is broken out both by technology and the region into which the solar storage products are expected to be sold.



#### **Contents**

#### **EXECUTIVE SUMMARY**

- E.1 Declining Solar Subsidies: Excellent News for Solar Storage
- E.2 Lead-acid batteries: Still the One to Beat, Still A Hard Way to Make Money
- E.3 A Boom for Storage for Utility-Scale PV and CSP?
- E.4 The New Market for Residential PV Storage
- E.5 Opportunities in Solar-Power Storage by Type of Storage Technology
- E.6 Firms to Watch in the Solar-Related Storage Sector
- E.5 Summary of Eight-Year Forecasts of Solar-Related Energy Storage
- E.5.1 Opportunities for Solar-Power Storage by World Region

#### **CHAPTER ONE: INTRODUCTION**

- 1.1 Background to this Report
  - 1.1.1 The Changing Storage Needs of the Solar Sector
  - 1.1.2 Recent Evolution of Solar Storage Technology
- 1.2 Goal and Scope of this Report
- 1.3 Methodology of this Report
  - 1.3.1 Forecasting Methodology
  - 1.3.2 Data Sources
  - 1.3.3 Alternative Scenarios
- 1.4 Plan of this Report

# CHAPTER TWO: TECHNOLOGIES AND PRODUCTS FOR SOLAR-RELATED ENERGY STORAGE

- 2.1 Solar Technology Storage Options Expanding in Number and in Capacity Too
  - 2.1.1 Pricing Trends for Solar Energy Storage Technologies
- 2.2 Lead-Acid and Lead-Carbon Batteries
  - 2.2.1 Types of Lead-Acid Battery
- 2.2.2 The Transition to Lead-Carbon Batteries
- 2.3 Metal Hydride Batteries
- 2.4 Sodium Sulfur Batteries for the Solar Market
  - 2.4.1 Recent Technical Developments in NaS Batteries
- 2.5 Flow Battery Systems and Solar
  - 2.5.1 Vanadium Flow Batteries
  - 2.5.2 Zinc Bromine and Other Hybrid Flow Batteries



- 2.5.3 Supply Structure for Flow Batteries and Supplier Interest in Solar Applications
- 2.6 Lithium-Ion Batteries for Solar Storage
  - 2.6.1 Advantages and Disadvantages of Lithium Ion Batteries in the Solar Market.
  - 2.6.2 Solar-Related Technology Evolution for the Lithium Ion Battery
- 2.7 Liquid Metal Batteries
- 2.8 Supercapacitors and Solar
- 2.8.1 Actual and Potential Applications for Supercapacitors in the Solar Sector
- 2.8.2 Supercapacitor Supply Structure and Supplier Interest in Solar Applications
- 2.8.3 Ultrabatteries in Solar
- 2.9 Solar and Mechanical Storage
  - 2.9.1 Pumped Hydro-Electric Storage
  - 2.9.2 Compressed Air Energy Storage
  - 2.9.3 Flywheels
- 2.10 Related and Competitive Technologies and Solutions
  - 2.10.1 Smart Grids and Solar Storage
  - 2.10.2 FACTS
  - 2.10.3 Renewable Integration Management Systems (RIMS)
- 2.11 A Note on Thermal Solar/CSP and Thermal Storage
- 2.11 Key Points Made In this Chapter

# CHAPTER THREE: MARKETS AND EIGHT-YEAR FORECASTS FOR SOLAR-RELATED ENERGY STORAGE

- 3.1 Key Drivers for Storage Purchase in Solar Power Markets
- 3.1.1 Generation Variability: Periodic Regular and Irregular Variations in Solar Power
- 3.1.2 Non-Dispatchability: Future Opportunities for Dispatchable Solar
- 3.1.3 Grid Stability and Reliability in a Solar-Powered World
- 3.2.4 Regulatory Changes Impacting Solar Storage Markets: Declining FiTs and Mandated Storage
  - 3.2.5 Limitations on Solar As a Market for Energy Storage
- 3.3 It's an III Wind: PV's Troubles May Boost the Market for Storage
- 3.4 What a Difference a Year Makes: New Batteries for Small PV Installations
- 3.5 US Markets for Solar Storage
  - 3.5.1 Notable Projects
  - 3.5.2 Eight-Year Forecasts by Type of Technology
- 3.6 European Markets for Solar Storage
  - 3.6.1 Notable Projects
  - 3.6.2 Eight-Year Forecasts by Type of Technology
- 3.7 Japanese Markets for Solar Storage



- 3.7.1 Notable Projects
- 3.7.2 Eight-Year Forecasts by Type of Technology
- 3.8 Chinese Markets for Solar Storage
  - 3.8.1 Notable Projects
  - 3.8.2 Eight-Year Forecasts by Type of Technology
- 3.9 Indian Markets for Solar Storage
  - 3.9.1 Notable Projects
  - 3.9.2 Eight-Year Forecasts by Type of Technology
- 3.10 Other Markets for Solar Storage
  - 3.9.1 Notable Projects
  - 3.9.2 Eight-Year Forecasts by Type of Technology
- 3.10 Key Points Made In this Chapter



#### I would like to order

Product name: Solar Storage 2013

Product link: https://marketpublishers.com/r/S40096D18D5EN.html

Price: US\$ 1,995.00 (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 <a href="https://marketpublishers.com/r/S40096D18D5EN.html">https://marketpublishers.com/r/S40096D18D5EN.html</a>

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 <a href="https://marketpublishers.com/docs/terms.html">https://marketpublishers.com/docs/terms.html</a>

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