

Asia Battery Energy Storage Market Opportunity Analysis

<https://marketpublishers.com/r/A232C38FBDCEN.html>

Date: October 2016

Pages: 90

Price: US\$ 2,000.00 (Single User License)

ID: A232C38FBDCEN

Abstracts

Please note: extra shipping charges are applied when purchasing Hard Copy License depending on the location.

Across the world, efforts are underway to improve the way to store and distribute energy, as electricity generation mix is shifting towards more sustainable but intermittent forms of energy generation, such as wind and solar power. The rapid growth in variable renewable energy is catalyzing efforts to modernize the electricity system. At high levels of penetration, variable renewable energy increases the need for resources that contribute to system flexibility. This ensures that system stability is maintained by matching supply and demand of electricity. Battery storage is one of the options for enhancing system flexibility in these circumstances by managing electricity supply fluctuations. Battery storage can also increase local penetration and self-consumption from small solar PV facility installed at commercial facilities and at households.

Asian countries that include some of the highly industrialized and geographically vast sized ones are pushing for massive growth in the electricity generation capacity from renewable sources. Deployments of renewable based power generation projects have gained momentum across the region. The integration of most of those generating facilities with battery based energy storage system has opened the most important market for batteries along with reinforcing the role of renewable energy in electricity generation mix of any country. The massive capacity addition targets in almost all the countries in the region will obviously need more BESS as more such renewable electricity generation facilities will be required to integrate with the electric grid.

The number of grid connected renewable electricity generation plants is increasing exponentially and is projected to increase continuously in at least two decades across the region particularly in China, India, Japan, South Korea and Philippines. As a result

the need for frequency regulation in the electric grid to accommodate the intermittent generation from solar or wind power plants will also grow. The current trends of using battery based energy storage have already eliminated the need of having spinning reserves for emergency power backup. Large sized battery energy storage systems are likely to replace a majority of existing spinning reserves in the form of gas or diesel generation sets by 2022 and by 2025 the energy storage systems with the electric utilities will be battery only. Frequency response is likely to represent the largest share of applications of BESSs in terms of storage capacity in the coming years. Grid frequency regulation and renewable integration – these two main areas of applications of BESEs are estimated to occupy more than three-fourth of market leaving the rest for off-grid electricity, residential and electric vehicles.

Four Asian countries – Japan, China, South Korea and Taiwan are already home to several leading battery manufacturers. In fact, some of them are included among the top 10 battery making companies in the world. As per all projections Asian market for battery energy storage systems is going to share the largest segment. At present, the entry of foreign battery suppliers is quite difficult in South Korea, Japan or China due to limited size and presence of large number of domestic suppliers. But as the market is poised to expand substantially more foreign investments are very like to flow in Asia including these three countries.

Batteries are already facilitating the transition towards a renewables-based power system in islands, rural areas and local households. Various projects across the region have also demonstrated that batteries are capable of supporting such a transition in larger interconnected networks. In order to achieve sustainable growth in Asia that is the home of over 45% of world population, renewable energy is the future. In order to serve renewable energy the purpose for which it is deployed, BESS is as necessary as the generation system. This is going to have a big impact on the electricity generation mix along with opening a new avenue of enormous potential for economic growth.

“Asia Battery Energy Storage Market Opportunity Analysis” Report Highlights::

Asia Battery Storage Market Analysis by Country

Current Market Scenario & Trends

Battery Energy Storage System Overview

Technological Aspects of Battery in Energy Storage System

Asia Battery Energy Storage Future Outlook by Countries

Contents

1. BATTERY ENERGY STORAGE SYSTEM OVERVIEW

- 1.1 Energy Storage System with Battery Overall Scenario
- 1.2 Grid Connected Battery Energy Storage System
- 1.3 Off Grid Battery Energy Storage System

2. TECHNOLOGICAL ASPECTS OF BATTERY IN ENERGY STORAGE SYSTEM

- 2.1 Conventional Batteries
 - 2.1.1 Lead-Acid Battery
 - 2.1.2 Lithium-Ion Battery
 - 2.1.3 Nickel-Cadmium Battery
- 2.2 High Temperature Battery
 - 2.2.1 Sodium Sulfur Battery
 - 2.2.2 Sodium Nickel Chloride Battery
- 2.3 Flow Battery
 - 2.3.1 Redox Flow Battery
 - 2.3.2 Vanadium Redox (VRB) Flow Batteries
 - 2.3.3 Zinc-Bromine (ZNBR) Flow Batteries

3. BATTERY ENERGY STORAGE APPLICATIONS

- 3.1 Distributed Generation
- 3.2 Renewable Energy Generation
- 3.3 Grid Stability
- 3.4 Load Management
- 3.5 Electric Vehicles

4. JAPAN BATTERY ENERGY STORAGE SYSTEM MARKET OUTLOOK

- 4.1 Market Overview
- 4.2 Recent Trends
- 4.3 Future Outlook

5. CHINA BATTERY ENERGY STORAGE SYSTEM MARKET OUTLOOK

- 5.1 Market Overview

5.2 Recent Trends

5.3 Future Outlook

6. INDIA BATTERY ENERGY STORAGE SYSTEM MARKET OUTLOOK

6.1 Market Overview

6.2 Recent Trends

6.3 Future Outlook

7. SOUTH KOREA BATTERY ENERGY STORAGE SYSTEM MARKET OUTLOOK

7.1 Market Overview

7.2 Recent Trends

7.3 Future Outlook

8. REST OF ASIA (SINGAPORE, TAIWAN, PHILIPPINES)

9. FAVORABLE MARKET PARAMETERS

9.1 Renewable Energy Integration

9.2 Micro-Grid/Distributed Generation

9.3 User Side Applications

9.4 Large Scale Installations of Solar Roof-Top PV Power Generation Systems

9.5 Electric Vehicles

10. COMMERCIAL CHALLENGES & ISSUES TO BE RESOLVED

10.1 High Cost of Battery

10.2 Unavailability of Large Sized Storage Capacity

10.3 Technology Adoption

10.4 Disposal & Recycling

11. ASIA BATTERY ENERGY STORAGE FUTURE OUTLOOK

12. COMPANY PROFILES

12.1 BYD

12.2 China Aviation Lithium Battery (CALB)

12.3 Kokam Co. Ltd.

12.4 LG Chem

12.5 Panasonic

12.6 NGK Insulators

List Of Figures

LIST OF FIGURES

Figure 4-1: Japan - Number of Battery Energy Storage Installations by Battery Type(%), 2016

Figure 4-2: Japan - Cumulative Energy Storage Capacity by Battery Type (%), 2016

Figure 4-3: Japan - Cumulative Solar PV Power Generation Capacity (GW), 2006, 2011 & 2015

Figure 4-4: Japan - Projected Electricity Generation Mix (%), 2030

Figure 4-5: Japan - Solar PV Power Installed Capacity Projection (GW), 2015 & 2020

Figure 4-6: Japan - Wind Power Installed Capacity Projection (GW), 2015 & 2020

Figure 5-1: China - Energy Storage Capacity (MW), 2012 - 2016

Figure 5-2: China - Battery Energy Storage by Application (%), 2014

Figure 5-3: China - Cumulative Electricity Consumption (TWh), 2005 – 2015

Figure 5-4: China - Installed Power Generation Capacity by Energy Source (GW), 2016

Figure 5-5: China - Cumulative Installed Capacity for Solar & Wind (MW), 2005, 2010 & 2015

Figure 5-6: China - Cumulative Number of New Energy Vehicles (Electric Vehicles + Plug-in Hybrids), 2011-2015

Figure 5-7: China - Type of Batteries in Energy storage by Use (%), 2015

Figure 5-8: China - Total Energy Storage Capacity Projection (MW), 2016 & 2020(BAU case)

Figure 5-9: China - Total Energy Storage Capacity Projection (MW), 2016 & 2020 (Ideal case)

Figure 6-1: India - Energy Storage Market (GW), 2015 & 2022*

Figure 6-2: India - Growth in Total Power Generation Capacity & Renewable Power Generation Capacity (GW), 2006 & 2016

Figure 6-3: India - Electric Vehicles Sales, FY'14 - FY'16

Figure 6-4: India - Existing Installed Capacity & Target of Solar & Wind Power (GW), 2016 & 2022

Figure 6-5: India - Projected Market for Energy Storage (%), 2020

Figure 7-1: South Korea - Number of Battery Energy Storage Installations by Battery Type(%), 2016

Figure 7-2: South Korea - Energy Storage Capacity by Battery Type (%), 2016

Figure 7-3: South Korea - Installed Electricity Generation Capacity (GW), 2015

Figure 7-4: S Korea - Electricity Generation Capacity by Fuel (%), 2015

Figure 7-5: S Korea - Electricity Generation by Energy Sources (TWh), 2015

Figure 7-6: S Korea - Electricity Generation by Fuel (%), 2015

Figure 7-7: South Korea - Cumulative Solar PV Installed Power Generation Capacity (MW), 2011 - 2015

Figure 7-8: South Korea - Cumulative Wind Power Generation Installed Capacity (MW), 2011-2015

Figure 7-9: South Korea - Electricity Demand Projections (TWh), 2014 & 2029

Figure 7-10: South Korea – Renewable (Solar PV+ Wind) Installed Power Generation Capacity Projection (GW), 2015 & 2020

Figure 8-1: Singapore - Power Generation Capacity (MW), 2012-16

Figure 8-2: Singapore - Electricity Generation by Source (%), 2015

Figure 8-3: Singapore - Installed Nameplate Capacity of Solar PV Systems (MW), 2012-16

Figure 9-1: Estimated Investment in Energy Storage in RE Integration (US\$ Million), 2015 & 2024

Figure 10-1: Levelized Costs of Electricity (US\$/kWh) Using Various Energy Storage Technologies

List Of Tables

LIST OF TABLES

Table 2-1: Technical Specifications of Lithium-Ion Batteries

Table 2-2: Comparison of Batteries for Energy Storage

Table 5-1: China - Battery Types by Storage Capacity, 2012 & 2014

Table 6-1: India - Estimated Energy Storage Market (MW), 2020

Table 7-1: South Korea - Battery Energy Storage Installations by Battery Type, 2016

Table 8-1: Singapore - Research Projects On BESS

I would like to order

Product name: Asia Battery Energy Storage Market Opportunity Analysis

Product link: <https://marketpublishers.com/r/A232C38FBDCEN.html>

Price: US\$ 2,000.00 (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/A232C38FBDCEN.html>