

## Solar Energy South Africa

# Battery storage as a service Japan



## Overview

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The increasing generation of renewables on the Japanese grid has led to various support policies and CAPEX subsidy schemes to support the deployment of grid-scale Battery Energy Storage (BESS). In 2021, Japan's 6<sup>th</sup> Strategic Energy Plan, followed by the Green Transformation Act in 2023, highlighting its commitment to reaching Net Zero by 2050.

It is listed as available in Japan in 2-hour duration (1927.2kW/3854.4kWh) and 4-hour duration (979.2kW/3916.8kWh) configurations. The BESS will enter Japan's newly opened ancillary services markets through which assets will participate in helping balance the frequency of the electricity grid.

It is now among the many Japanese and international players seeking to develop large-scale battery energy storage system (BESS) assets, and is partnered with the UK's Gore Street Capital to manage a fund promoting storage and renewable energy in collaboration with the Tokyo Metropolitan Government.

Beginning more than a decade ago, Sumitomo Corporation was among the first to work on social implementation of large-scale storage batteries that can be connected to the power grid. In 2015, we started Japan's first demonstration project covering energy storage connected to the power grid in

the Koshikishima, Satsumasendai City, Kagoshima. What energy storage technology does Japan use?

In terms of energy storage technology, Japan is supported primarily by pumped hydro and by NaS and Li-ion battery storage capability, according to the US Department of Energy.<sup>88</sup> While Japan is the world leader in NaS battery energy storage technology, it is also the world's second manufacturer of Pb-Acid energy storage systems.

What is the future of battery storage in Japan?

At the residential level, where battery storage capacities are projected at 100,000 to 250,000 kW, life-span is also projected to increase 50 to 100%. Other small-scale uses, such as data center backup energy storage are projected by NEDO to become commercially widespread in Japan before 2020.

What types of batteries are used in Japan's energy storage landscape?

Various battery technology types are represented in Japan's energy storage landscape. These range in diversity, from large-scale NaS sites with output capacity of up to 50 mW, to wind-farm-based VRFB facilities, to a 600 kW facility built of aggregated Li-ion electric vehicle batteries.

Which batteries are most commonly deployed in Japan?

According to Eurobat, nickel-based batteries are the second most commonly-deployed battery after lead-based batteries. Although deployment on the Japanese market is focused on the vehicular market, it ranges in scale from utility and industrial scale to home-appliance scale.

Does Japan have energy storage sites?

The interactive map includes GPS coordinates for Japan's primary energy storage sites, as well as capacity, launch year, primary operator/owner, and a brief description of the site. One immediately apparent trend demonstrated by the interactive map is the distribution of Japan's energy storage sites.

How many energy storage subsidies does Japan have?

According to Japan's International Institute of Energy Economics, as of FY 2012-2013, Japan's ministry of Environment oversaw two major energy storage subsidy programs.

## Battery storage as a service Japan



- ✓ 50KW/100KWH
- ✓ HIGHER POWER OUTPUT IN OFF-GRID MODE
- ✓ CONVENIENT OPERATION & MAINTENANCE
- ✓ PRE-WIRED

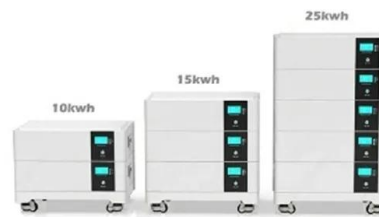
## Battery Energy Storage System (BESS) as a service in Finland:

...

Battery energy storage systems as a service contracts start with periods as short as a few months. Contracts are based on a regular monthly or annual fee. Terms can be adapted to fit changing business needs. Customers receive guaranteed 24/7 system reliability for zero asset investment and with low implementation costs, including comprehensive

## Large-scale energy storage business , Sumitomo Corporation

Why. Resolving issues facing the spread of renewable energy with large storage batteries. Despite the global trend toward decarbonization, the share of renewable energy in Japan remains at a low level of roughly 20%, as it is an unstable power source whose power generation is greatly affected by natural conditions, such as sunlight and wind, and because Japan's current power ...



## Ekus Energy announces first battery storage project in Japan

The 30MW/120MWh Hirohara Battery Energy Storage System (BESS) is located in Oaza Hirohara, Miyazaki City, Miyazaki Prefecture. It is Ekus's first battery in Japan, and the company has agreed a 20-year offtake agreement for the project with Tokyo Gas.

## Battery storage stands out in Japan clean power auction

Japan's first auction for long-term zero emissions power capacity has attracted strong bidding interest with a plan to install battery storage, as investment in the power storage system is gaining momentum in line with expanded use of fluctuating renewable energy sources.



## [The Energy Storage Landscape in Japan](#)

- f. Primary Firms of Japan’s Energy Storage Landscape
  - g. Distribution of the Energy Storage Market
  - i. Installations: Pumped Hydro
  - ii. Installations: Batteries
  - h. Japan's battery Storage Market on the World Stage
  - i. Trends in the energy storage market
  - j. Major Subsidy Programs Relevant to Battery Energy Storage Technology
6. Energy Storage Markets

## Tesla Megapack battery storage system enters ...

The Megapack installation is based on Tesla's integrated solution which includes lithium-ion (Li-ion) batteries, power conversion system (PCS, described as 'power conditioner' in Japanese parlance), ...



## The resurgence of Battery-as-a-Service (BaaS)

Other providers. NIO is leading the way for BaaS in China; however, other companies are also entering the space: In May 2020, CF Energy, an energy service provider in China, announced that



EDF CF - a joint venture between CF Energy and EDF (China) Holdings Ltd - had signed an exclusive co-operating agreement with BAIC Qingxiang Technology Co., Ltd (BAIC QX) (A ...

## Participation in a Grid Battery Storage Project in Kitahiroshima ...

Marubeni Corporation (hereinafter, "Marubeni") through its wholly-owned subsidiary, Kitahiroshima Grid Battery Storage LLC (hereinafter, the "LLC"), will participate in a grid battery storage project (hereinafter, the "Project"), by means of the construction and ownership of a grid battery storage system\*1 (generation capacity 25.0MW, storage capacity ...



## Ekus Energy breaks ground on 120 MWh battery storage project in Japan

A total 1.67 GW of projects won contracts, including 32 battery storage systems totalling 1.1 GW and three pumped hydro energy storage projects totalling 577 MW. Japan's Ministry of Economy, Trade and Industry (METI) plans to ...

## Japan: Expert panel discusses BESS market growth, ...

Speakers: Shunsuke Kawashima, deputy general manager, Itochu Corporation Ross Bennett,

managing director and head of structured finance, NORD/LB Joost van Acht, managing director, ib vogt Dr Mahdi Behrangrad, head of ESS/VPP business development, Pacifico Energy Nick Morely, APAC technical lead, Eku Energy Drivers for energy storage in ...



## Marubeni putting 100MWh BESS onto the grid in Japan's storage ...

The project will be a 4-hour duration asset with 25MW power output to 103.7MWh of energy storage capacity, delivered through a wholly owned subsidiary of the corporation in the Hokkaido city of Kitahiroshima. Marubeni's new subsidiary, Kitahiroshima Battery Storage, will put the energy stored in the BESS to use in a number of different ...

## Hirohara Battery Energy Storage System project

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## [Battery Storage](#)

Department of Energy's 2021 investment for battery storage technology research and increasing access Deep cycle service requires high integrity positive active material with design features to retain the active material. 1980s and



by Mitsui in Japan. The iron-chromium flow battery is a redox flow battery (RFB). Energy is stored by

## GS Yuasa's lithium-ion technology to power multiple Japanese ...

Constant voltage monitoring and failure monitoring are performed on all of the cells to ensure the reliability of the entire system. In the event of a malfunction, GS Yuasa utilises its nationwide service network (one of Japan's largest) to promptly respond to customer needs. Overview of the lithium-ion storage battery facility



## All the Benefits and Zero Investment with Battery-as-a-Service®

Battery-as-a-Service® is Polarium's circular business model for companies that want to reap the full benefits of energy storage built on lithium batteries, but not own the solution themselves. Polarium takes full responsibility for the battery, from installation and maintenance to replacement and recycling - while the customers can focus

## Large-scale energy storage business , Sumitomo ...

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## Japan to Ease Rules on Lithium-Ion Battery Warehouses to ...

To improve the environment for domestic production of storage batteries, such as lithium-ion batteries for electric vehicles (EVs), the government will ease storage regulations for related materials and products and expand support for new factory construction in Japan as early as fiscal 2023, The Yomiuri Shimbun has learned. The move is aimed at ensuring a stable ...

## Battery Electric Storage Systems: Advances, Challenges, and

The increasing integration of renewable energy sources (RESs) and the growing demand for sustainable power solutions have necessitated the widespread deployment of energy storage systems. Among these systems, battery energy storage systems (BESSs) have emerged as a promising technology due to their flexibility, scalability, and cost-effectiveness. ...



## Ekus Energy Commits to Japan's Long-Term Energy Transition

...



? Japan's battery energy storage market is expected to grow significantly, with projections estimating a compound annual growth rate of around 17.5% over the next six years alone. The installed capacity of large-scale energy storage in Japan is expected to increase from approximately 4GW/10GWh in 2022 to about 10 GW/27GWh in 2030. \*

## Renewable energy and battery storage: A winning combination

Energy storage enables all this green electricity to be used efficiently, ensuring electricity grids remain stable. Battery storage technology is versatile and powerful. Large-scale stationary storage systems ensure sufficient renewable energies are always available at the right time.



### [Battery Storage In Japan](#)

But why the focus on battery storage now, given Japan's long history with solar panels and other green energy sources? The answer lies in recent changes. With the surge in solar power, excess electricity has become a real issue, especially as solar generation often exceeds demand. Plus, with industries like AI, data centers, and semiconductor

## Japan Battery Market Growth, Size, Forecast to 2032

The Japan Battery Market Size is expected to reach USD 27.64 billion by 2032, at a CAGR of 9.37% during the forecast period 2022 to 2032. The market is likely to be driven by increased adoption of electric vehicles and demand for

consumer electronics.



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## Battery Energy Storage System as a Service

Why Choose Us. CLP e provides a wide range of expertise and a comprehensive one-stop service from design, build and implementation. We work with our customers to develop fully integrated energy storage solutions that help them meet their goals. Unlike other product manufacturers, we are not bound by a single brand, so we can offer a wide range of reliable ...



## Japan: panel on BESS market growth, opportunities ...

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## Japan Incentivizes Battery Storage Projects Amid Growing Demand

The ramp up of battery storage projects in Japan continues apace, aided by growing subsidy avenues and rising volumes on various electricity markets, from spot to balancing to capacity. As of May 2023, about 1.1 GW of supply has been contracted for grid-scale storage batteries nationwide, with contracts for an additional 12 GW under



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