

## European Solar Energy Storage

# Japan pumped storage project public announcement



## Overview

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Is pumped storage a promising power storage system for the future?

As a result, the annual potential storage capacity that can be practically developed is 180 to 420 TWh/year, and the power generation cost is 19 to 21 JPY/kWh, indicating that the new pumped storage power generation is a promising power storage system for the future.

How many battery energy storage projects have been awarded in Japan?

In Japan's first competitive auctions for low-carbon energy capacity, more than a gigawatt of bids from battery storage project developers have been successful. The awarded contracts total 1.67GW, including 32 battery energy storage system (BESS) projects totalling 1.1GW and three pumped hydro energy storage (PHES) projects totalling 577MW.

How many pumped hydro projects are there in Japan?

Japan currently has three major pumped hydro projects in various stages of completion, including one serving Tokyo that will have the world's third-largest pumped-storage power capacity when fully online. Utilities are also making investments in existing plants so they are more responsive to contemporary energy needs.

When did pumped storage start?

From the late 1980s through to the early 1990s, power demand began to surge along with the economic boom, and peak demand rose sharply. It was therefore decided to construct new pumped storage schemes, one of which was the Omarugawa plant, where the last of four units was commissioned in 2011.

Will the new pumped storage power generation plant prevent floods and droughts?

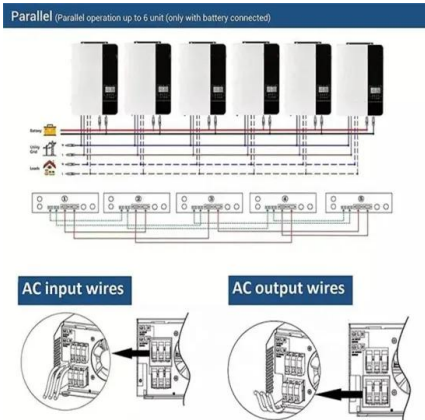
In this proposal, the specifications of the new pumped storage power

generation plant were reviewed in line with the disaster prevention measures implemented by the government, in light of the prediction that floods and droughts may occur twice as often as they do currently owing to the climate change in the future.

Will pumped storage hydropower bring balance and stability to Japan's grid?

Pumped storage hydropower, a late 19th century technology that was largely ignored by the markets for decades, is now emerging as pivotal to bringing balance and stability to Japan's grid as the nation both reboots nuclear energy and moves to rely more on solar and wind generation.

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### Potential Capacity and Cost of Pumped-Storage Power in ...

Water stored in a multipurpose dam is used for various purposes. It is thus important to ensure that water use for pumped storage power does not undermine the functions of water utilization and flood control of the dam.

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### Kyushu Electric and Government Consider New Pumped Storage ...

Kyushu Electric Power Co. and the Ministry of Land, Infrastructure, Transport and Tourism's Kyushu Regional Development Bureau are considering the construction of a new pumped storage power plant using two existing dams in Oita Prefecture.

### Present status of pumped

## hydro storage operations to ...

Abstract: This paper focuses on pumped hydro energy storage (PHES) plants' current operations after electricity system reforms and variable renewable energy (VRE) installations in Japan.



## How Can We Make It Happen? A Bright and Affluent Zero ...

In this installment, he asked Research Group Leader Ryuzo Asada and Researcher Satoko Kawarasaki, who are researching innovative pumped storage hydropower as a power storage system at LCS, about the transition to renewable energy.

## Pumped Hydro: The Emerging Backbone of Japan's ...

Japan NRG looks at how pumped hydro capacity, a relatively simple energy storage method, is being developed, deployed and traded in new ways to meet Japan's 21st century energy needs.



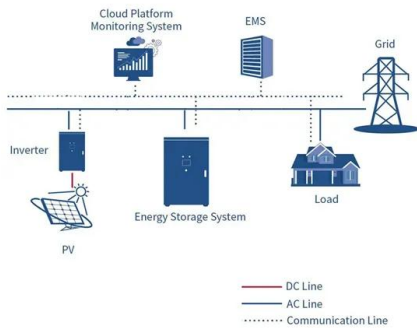
## Japan's Omarugawa pumped- storage scheme with an asphalt ...

The Kyushu Electric Power Co has developed a number of pumped-storage plants over the years to provide power for daytime peak demand periods as well as for emergency backup.

## Japan's Pumped Storage Power Station Projects: Powering the

...

With Japan targeting 36-38% renewable energy by 2030, pumped storage is the Swiss Army knife of the grid. Solar and wind are great, but they're as reliable as a Tokyo train schedule during a typhoon.



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