



LEAD BATTERIES: ENERGY STORAGE CASE STUDY



Narada

Large-scale Grid Frequency Regulation System

Bennewitz, Germany

Located in Bennewitz, Saxony, is a large-scale, 25 MWh lead-carbon battery energy storage system.

Narada, one of China's leading battery energy storage system suppliers partnered with energy storage operator, Upside Group, in a 16 MW frequency regulation project for the German power grid.

The 25 MWh installation has been connected to the local utility grid since May 2019.

“As Narada deploys more and more projects in Germany and worldwide, this is an exciting step forward for our company and our innovative technology, bringing us further into the energy storage market.”

Zhu Baoyi, CEO, Narada

Technical Specification

The battery system houses more than 10,500 individual battery cells with nine battery inverters, in 18 containers.

The batteries used are 1200 Ah lead-carbon valve-regulated provided by Narada.

Power is delivered through nine SMA Sunny Central Storage Inverters, supplied by SMA Solar Technology, each capable of delivering 1.8 MVA.

SMA also installed a Hybrid Controller for optimized battery charging and discharging.

The coordinated system solution allows optimal control to provide grid relief for the entire region, and the stabilization of the Central European utility grid.



All the battery cells are individually monitored to ensure any deviation in performance is detected and corrected before there is a problem. The battery is operated at partial state-of-charge so that it can accept and deliver charge at all times.

Each container has 588 units 2 V cells which are installed on site.

The Narada lead-carbon technology used was developed in partnership with CBI, and the REX Carbon cells have a calendar life of 15 years and an extended cycle life in shallow cycle service.

They have been extensively deployed in China for peak shaving, off-grid wind power installations, and in telecommunications hybrid solutions and energy storage model datacenters.

Technical Summary

POI	20 kV
PCR Power	16 MW
Plant Power	16.4 MW
Storage Tech	Lead-carbon
Storage Cap.	25 MWh
Plant Design Life	20 years
Architecture	9 MVPS 18 Storage

About the Company

Narada was established in Hangzhou, China in 1994 and has evolved into one of the world's leading battery suppliers. The company majors in valve-regulated lead batteries and lithium batteries for various applications.

The renewable energy storage section is a major market for the company and Narada has an increasing presence in international markets.