



Grid-Scale Battery Energy Storage System

Driving the Green Energy Revolution



ENERGY VAULT®
Enabling a Renewable World

SPML Infra Limited-Energy Vault, USA partnership for manufacturing and deployment of grid scale Energy Storage Systems in India





Energy Storage Built for Needs

Smart. Scalable. Sustainable.

In today's fast-evolving green energy landscape, reliable energy storage solution is the key to unlocking efficiency, sustainability, and resilience. Our advanced Battery Energy Storage System (BESS) are custom-built and designed to adapt seamlessly to any requirements, whether for businesses, industries, or utilities.

With cutting-edge technology and modular designs, we empower industries and utilities to store energy more intelligently, use it more efficiently, and achieve long-term savings. Our solutions further enhance reliability and sustainability, supporting the transition to a cleaner energy future while contributing to the ambitious national vision of Viksit Bharat.

Key Benefits

Tailored Solutions

Custom-built storage from kWh to MWh. Compatible with solar, wind, hybrid systems.

Reliable Performance

High efficiency. Long lifecycle. Low maintenance.

Sustainable Impact

Reduce carbon footprint, maximize renewable energy usage.

Smart Management

Intelligent monitoring, real-time optimization, remote support.



Driving the Future of Clean Energy

SPML Infra Limited, India's leading infrastructure development company has made a strategic foray into Battery Energy Storage System (BESS), reinforcing its commitment to the nation's 'Clean Energy' and 'Viksit Bharat' vision by investing in manufacturing and deployment of cutting-edge storage infrastructure to help shape a more sustainable and resilient energy future for India.



SPML Infra's BESS Division is at the forefront of India's clean energy movement, committed to designing and delivering end-to-end energy storage solutions through advanced lithium-ion technologies and EPC integration. Currently it is executing 1.0 GWh of energy storage project in India.

The company supports India's goal of reaching 500 GW of renewable energy by 2030, by offering reliable storage solutions that ensure grid stability, reduce peak loads, and seamless renewable integration.



Energy Vault®, USA is a market leader in utility-scale energy storage solutions designed to transform the world's approach to sustainable energy storage. The Company's comprehensive offerings include proprietary battery, gravity and green hydrogen energy storage technologies delivering safe and reliable energy system dispatching and optimization.



Each storage solution is supported by the Company's technology-agnostic energy management system software and integration platform. Unique to the industry, Energy Vault's innovative technology portfolio delivers customized short, long and multi-day/ultra-long duration energy storage solutions to help utilities, independent power producers, and large industrial energy users to significantly reduce energy costs while maintaining power supply reliability.

Energy Vault's track record includes over 1.2 GWh of executed battery energy storage projects, with another 2.0 GWh of energy storage solutions are contracted or under deployment in several countries.



1.2 GWh
BESS
INSTALLED



SPML Infra - Energy Vault Collaboration

SPML Infra Limited, India's leading infrastructure development company has entered into an exclusive agreement with **Energy Vault, USA**, a global leader in advanced energy storage solutions. This strategic partnership aims to accelerate the manufacturing and deployment of Energy Storage System (ESS) in India. As part of the agreement, Energy Vault will transfer its state-of-the-art B-VAULT Battery Energy Storage System (BESS) technology and VaultOS Energy Management System (EMS) software to SPML, enabling localized production and faster adoption of clean energy infrastructure in India.

Energy Vault has **successfully deployed more than 1.2 GWh** of Battery Energy Storage Systems since their launch in 2023 across multiple countries, including the USA, Australia, Italy, and Switzerland. Energy Vault is currently **contracted or under execution an additional 2.0 GWh of projects**, and **SPML Infra is executing 1.0 GWh of BESS project in India**.

3.0 GWh
BESS
CONTRACTED/
UNDER
EXECUTION

India's Battery Energy Storage System (BESS) market is projected to reach **INR 2.78 Lakh Crore (USD 32 billion) by 2030**, growing at a **CAGR of 27%**. This growth is fueled by government initiatives, rising renewable energy adoption, and the need for grid stability. The National Energy Storage Mission and ambitious renewable targets are driving this momentum, positioning BESS as a key pillar of India's energy future.



Market Outlook





Our Strategic Vision

To lead India's clean energy transformation with innovative and reliable battery storage solutions that ensure sustainability and grid resilience.



Our Core Mission

- Develop and deploy advanced, scalable Battery Energy Storage System (BESS)
- Offer comprehensive, integrated EPC solutions tailored to clients' specific needs
- Accelerate sustainable energy adoption across grid, industrial, and mobility applications
- Support India's renewable energy goals through seamless renewable integration
- Foster technology innovation in energy storage systems to enhance performance and lifecycle management
- Deliver clean, reliable energy to empower utilities and strengthen business resilience



Being a licensed partner of Energy Vault, SPML Infra Limited will deliver the turnkey energy storage solutions:

- Platform 2 (2025): 4.18–5.84 MWh AC/DC-coupled BESS
- Platform 3 (2026): 5.015–6.0 MWh AC/DC-coupled BESS
- Energy Vault B-Vault™ Technology – Modular, flexible lithium-ion tech with high-density storage

EPC Integration: Engineering, Procurement & Construction – full lifecycle support





Products & Services

End-to-End BESS Solutions (With Energy Vault License)

B-VAULT™

B-VAULT™ is a suite of fully-integrated battery energy storage system (BESS) designed for reliability, flexibility, and energy availability. Innovative enclosure design enables extensive customer choice for both battery and inverter suppliers.

Unique AC-coupled and DC-coupled configurations allow for in-depth project customization.

Why B-VAULT™

Flexible



Provide energy shifting and diverse grid services at GWh+ scale

Adaptable



Battery and inverter choices for AC or DC coupled systems and augmentation

Intelligent



Use VaultOS Energy Management System for standalone, hybrid, and fleet optimization

Turnkey



Smooth project delivery with a fully integrated enclosure and construction services

Safe & Secure



Proactive and reactive fire safety design and industry-leading cyber security features

VaultOS™ - Next Generation Energy Management System (EMS)

VaultOS™ provides real-time monitoring, operational control, and optimized dispatch across an array of generation and short to ultra-long duration energy storage assets. The battery EMS makes it easy to manage assets from an individual cell all the way through the entire fleet. These features enable deep insights into the performance, safety, and operation metrics of BESS.



Key Executed Projects

Energy Vault has successfully completed the following landmark energy storage system projects:

Energy Storage System, Texas, USA

Capacity: 200 MW/400 MWh B-Vault™ deployment

Project Highlights:

- Supports integration of wind and solar energy into the Texas grid
- Provides energy shifting and reliability to the Texas grid, generating revenue
- VaultOS™ monitors and controls BESS, from daily operations to advanced market bidding and system maintenance

Impact: Strengthens grid stability with future-proofed hardware & software architecture and advancing clean energy transition through St. Gall BESS

Completion: March 2024 (Phase-1), August 2025 (Phase-2)

Energy Storage System, USA

Capacity: 57 MW/114 MWh B-Vault™ deployment

Project Highlights:

- Provides energy services to support renewable energy production and improve grid resiliency in the Electric Reliability Council of Texas (ERCOT) region
- First deployment of Energy Vault's second generation B-Vault™ AC product
- VaultOS™ monitors and controls BESS daily operations

Impact: The project leverages AI-based forecasting capabilities, which have demonstrated leading performance in day ahead energy trading within the ERCOT market.

Completion: May 2025





SPML Infra-Executing 1 GWh BESS Project

First largest single BESS order awarded in India, to SPML Infra

SPML Infra Limited is executing a ₹1,128 crore (USD 120 million) project awarded by the National Thermal Power Corporation (NTPC) Limited to develop a 1 GWh Battery Energy Storage System (BESS) at NTPC's Barauni Thermal Power Station in Bihar.

This project ranks among the largest single BESS orders awarded in India, signaling a defining moment not just for SPML Infra, but for the country's clean energy ambitions.

The project will seamlessly integrate large-scale battery storage with existing thermal power infrastructure enabling peak load management, grid stability, and efficient integration of renewable power. As India's power networks evolve, Battery Energy Storage Systems are fast becoming the backbone of a stable, responsive, and future-ready electricity grid.

Scope of Work:

- Supply, civil works, and erection of a 250 MW / 1,000 MWh Battery Energy Storage System (BESS).
- Installation of 5 MWh DC containers integrated with Battery Management System (BMS) and Thermal Management System (TMS).
- Supply and installation of 33 kV panel boards.
- Laying and commissioning of 220 kV DC & AC cables.
- Development of 220 kV switchyard along with all associated accessories.
- Project execution period: 18 months.
- **Operation & Maintenance (O&M)** for a period of **15 years**.

**SPML Infra's Strategic Vision
10 GWh BESS deployment by 2030**