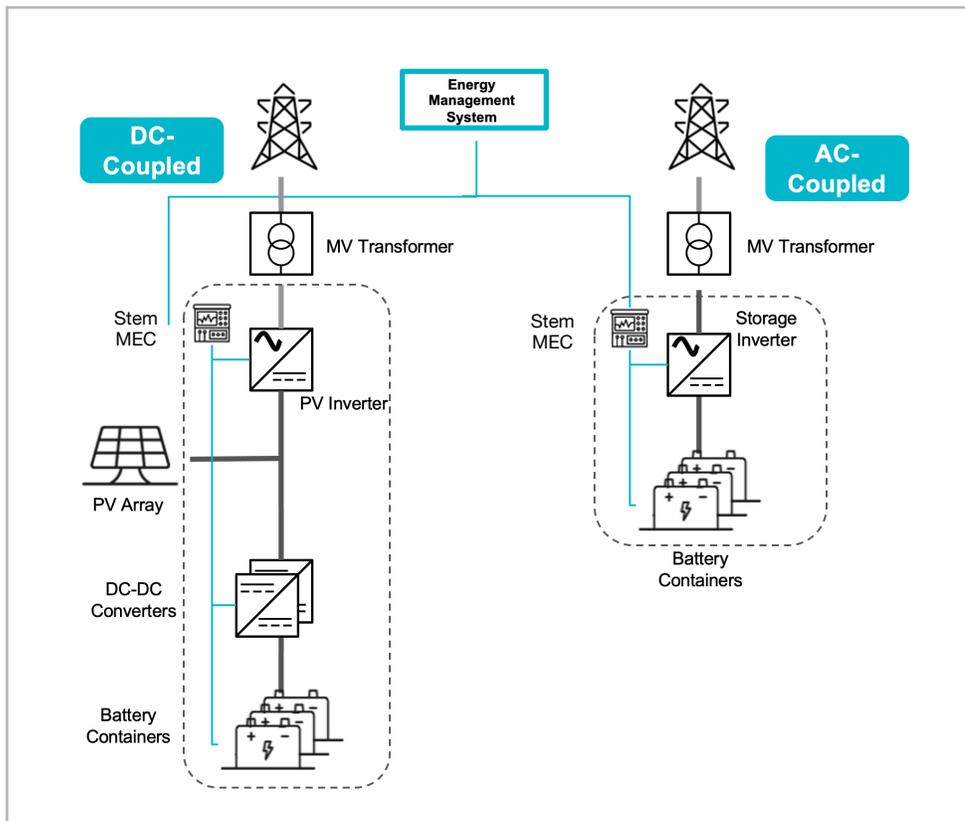


Modular Energy Storage System

Stem's Modular Energy Storage System (ESS) solution is a utility-scale energy storage system optimized for total cost of ownership and performance. Stem's Modular ESS scales with power and energy from few MWh to GWh. The Modular ESS integrates state-of-the-art Lithium Ion Battery System/DC Blocks and Power Conversion Systems (PCS) from top-tier Original Equipment Manufacturers (OEMs). These components undergo integration, testing and validation using Stem's Modular Energy Controller (MEC) and Digital Twin evaluation infrastructure. Stem's MEC enables flexibility to interoperate with various ESS hardware suppliers and technologies due to the adaptable MEC software stack. Our MEC's standard interface to Athena® Energy Management System (EMS) simplifies integration and makes the onboarding of OEM suppliers more efficient and predictable with the edge-to-cloud modules and applications. Our Athena EMS ensures high availability of the ESS by actively optimizing the performance of the asset. Stem's 24/7 Remote Operations Center (ROC) also ensures increased uptime and minimizes downtime risk through predictive maintenance and warranty management.

Stem's Modular ESS is available in both AC- and DC-coupled architectures as illustrated in the figure below:



Application

Stem's energy experts can help you meet your project needs by selecting the right battery and PCS supplier for your Modular ESS along with the MEC-to- EMS- to-Cloud value stack to participate in the following applications:

- Voltage and Frequency Regulation
- Demand Charge Reduction
- Peak Demand Management
- Market Participation
- Renewable Energy Integration and Smoothing
- Backup Power

Improve Performance

Enhance ESS asset performance with Stem's comprehensive end-to-end value stack with the Athena certified ESS hardware, Stem's MEC-to-Grid Edge-to-Cloud platform.

Modular Energy Controller

Stem's smart unit controller for ESS.

Athena Edge Platform

Stem's site control and onsite SCADA solution.

Athena Cloud Platform

Stem's remote monitoring solution, providing seamless integration to our bidding and asset management applications.



Reliable

Reduce complexity and increase uptime



Scalable

Deliver responsive services that adapt swiftly to evolving grid conditions



User-friendly

Simplify operation and enhance fleet visibility

Gain Modularity

Stem offers a procurement advantage with OEM relationships, Athena-certified hardware technology, and support throughout the Bid-to-Operate project lifecycle. Additionally, Stem's Modular ESS solution offers the below benefits:

Flexibility

Use the best-fit procurement model: self-procure inverter and DC-blocks from Stem to get competitive pricing due to our bulk buying ability or vice versa.

Lead Time

Minimize procurement lead times with Stem's experienced supply chain team, and reduce commissioning time with Athena-certified OEMs for more predictable operation dates.

Bankability

Get access to lab- as well as field-tested components from fully qualified, credible OEMs to ensure that the deployed ESS will perform safely and correctly from day one.

Diversification

Reduce concentration risk and increase benefits of a diversified supply chain.

Configurability

Select the components from various battery OEMs and PCS suppliers to size the system effectively to meet project needs and grid connection options.

Cost

Benefit from favorable pricing as Stem aggregates hardware volume with a primary OEM.

[For more information contact sales@stem.com](mailto:sales@stem.com)



Operational Services

System Level

- High performance guarantees which includes availability/uptime and capacity guarantees

PCS/Inverters

- 5-year standard, 15-year extended warranty for PCS/inverters and 10-year extended for medium voltage transformers
- Preventative maintenance plans

DC Blocks/Batteries

- 3-year standard, 17-year extended warranty
- Capacity guarantees
- Preventative maintenance plans

Electrical

Energy 20' DC Block Container: 3MWh – 5.5MWh (OEM dependent)

Power 20' AC Block with MV Transformer Skid: 1.6MW – 4MW (OEM dependent)

Medium Voltage Transformer: 12kV to 34.5kV options

Configurations: 1 x PCS skid matched with 1-4 DC block container(s), contact Stem for details regarding your preferred DC Block and PCS supplier

Cell Type: Li-ion Iron Phosphate (LFP)

Battery Thermal Management: Liquid Cool

Mechanical

DC Block/Batteries are available in a 20 x 8 feet container.

Weight varies depending on the energy density of the container (30-40 tons).

PCS with MVT are available on a 20 feet skid.

Weight varies depending on the power density of the PCS and MV transformer (15-20 tons).

Enclosure Protection: IP55 ingress protection, anticorrosion rating of C4 with the option of C5

Environmental

Operating Temperature Range: -25°C to +55°C

Relative Humidity: 5% to 95% (non-condensing)

Operating Altitude: < 2000m

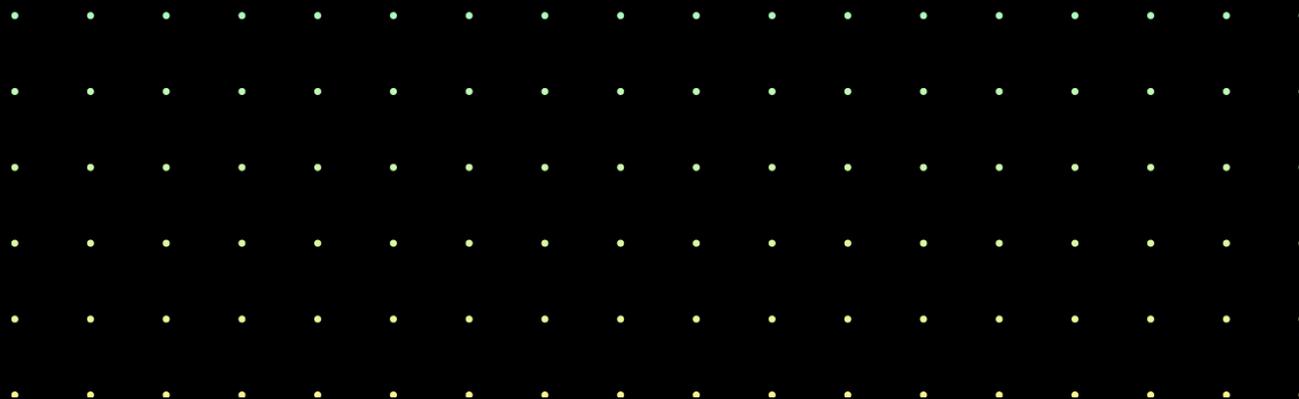
Standards

Modular ESS system configurations are certified to the latest energy storage system standards.

System: UL9540, IEEE 2030.5

DC Block/Battery: UL1973, UL9540A, UL1642, UN38.3, FDNY-TM2, NFPA 855 compliance

PCS/Inverter: UL1741, UL1741 SA, UL1741 SB, CSIP (depending on PCS/Inverter OEM supplier)



About Stem, Inc.

Stem is a global leader in AI-driven clean energy solutions and services.

Stem is dedicated to accelerating the energy transition and transforming the grid. We offer flexible, integrated solutions to improve returns and maximize the economic, environmental, and resiliency value across energy assets. Our trusted energy optimization platform empowers our partners & customers to deploy and unlock the full potential of clean energy assets at scale.

For more information, visit www.stem.com.