



Over the past decade, technologies driving renewable energy have advanced at a tremendous pace but safe, economical, environmentally-friendly storage systems have not. The key to high-grid penetration of renewable energy sources will be a **cost-effective, reliable, environmentally-friendly, scalable battery technology.**

## DESCRIPTION

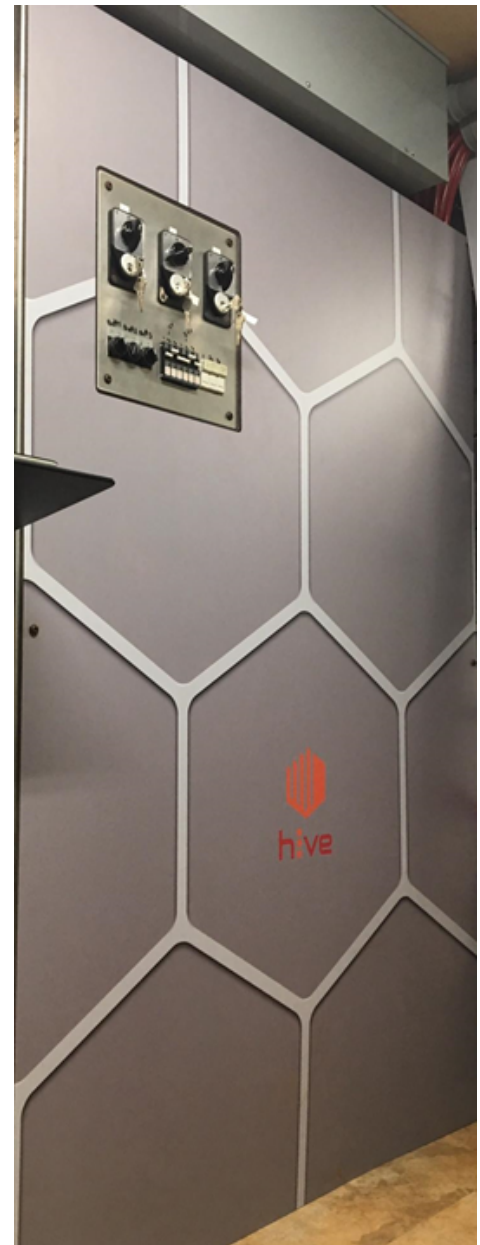
HiVE is a large format energy storage system for use in a wide range of residential, industrial, smart grid, and military applications.

HiVE's fully-integrated, high-voltage battery management platform is:

- Compatible with many conventional inverters on the market.
- Uses proprietary Multi-Mode Adaptive Power Technology (MAP) that connects solar array to the battery module and eliminates the need for a battery charge controller.
- Designed to accommodate alternative battery chemistries as they evolve.

## SPECIFIC ADVANTAGES

- Customers retain all the energy generated via on-site solar
- Directly coupled with solar panels through a unique HiVE subsystem
- BMS controls charge state rather than via external charger
- Compatible with many leading inverters
- Directly couples to inverter using a pre-charge circuit
- Powered by safe and environmentally-friendly lithium iron phosphate
- Requires less wiring which lowers installation costs
- Incorporates innovative cell tray design
- Uses fewer components than other battery systems



# HiVE BATTERY SUITE

## PERFORMANCE BENEFITS

- BMS controls solid-state electronics can be switched under partial or full load thus ensuring the longevity of the system
- Provides quick response power at rates up to 3C
- Users are not exposed to dangerous high voltage
- Outperforms all other available chemistries and lower voltage batteries in every performance metric
- Unique string level isolation provides superior electrical safety by lowering nominal voltage from 400- 1000V to less than 52V for servicing.



**Batteries have become the critical element to solve the energy storage challenge**

## GENERAL SPECIFICATIONS

Nominal battery voltage	512 VDC
Nominal battery capacity	400 Ah @C/3
Nominal battery energy capacity	Modular 50, 100, 150, 250, 500 kWh, up to 1.2MWh
Charge Type	CC/CV (Constant Current / Constant Voltage)
Charge Cut-off Voltage	584VDC
Discharge Cut-off Voltage	400 VDC
Internal Resistance	< 1 Milliohm per cell
Atmospheric pressure	86-106 Kpa
Relative humidity	<70%
Cycle life	>8000 at 80 % DoD

Max. Charge current	400 A (Continuous)
Max. Continuous discharge current	400 A
Peak discharge current	1200 A
Battery monitoring	Integrated
CanBus communication	Yes
Battery terminals	M8
Mounting position	Upright
Max. outer dimensions [LxWxH]	148 x 26 x 85 -inches
Weight (Cells only)	7900 lbs
Weight	

## TECHNICAL SPECIFICATIONS

Battery chemistry	Lithium Iron Phosphate
Protection degree	IP65 (electronics cabinet)
Over voltage, under voltage, over temperature Safety relay	Integrated
Safety relay controls	Integrated

Operating Temperature charge	0-45 deg. C
Operating Temperature discharge	-20-50 deg. C
Operating Range	450-560V HiVE Battery Suite