



# Valen Large Scale Energy Storage

Valen is redefining storage technology with its intelligent storage systems.



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# Container ESS Solution

## Energy Storage System



### Overview

Relieve wind and light abandonment, smooth power fluctuation, track dispatching plan, and improve the friendliness and reliability of power grid. In addition, energy storage can be combined with thermal power to participate in frequency modulation to obtain frequency modulation compensation.

### Applications:



Large wind and light power station



Frequency modulation of thermal power station



Power grid side independent energy storage

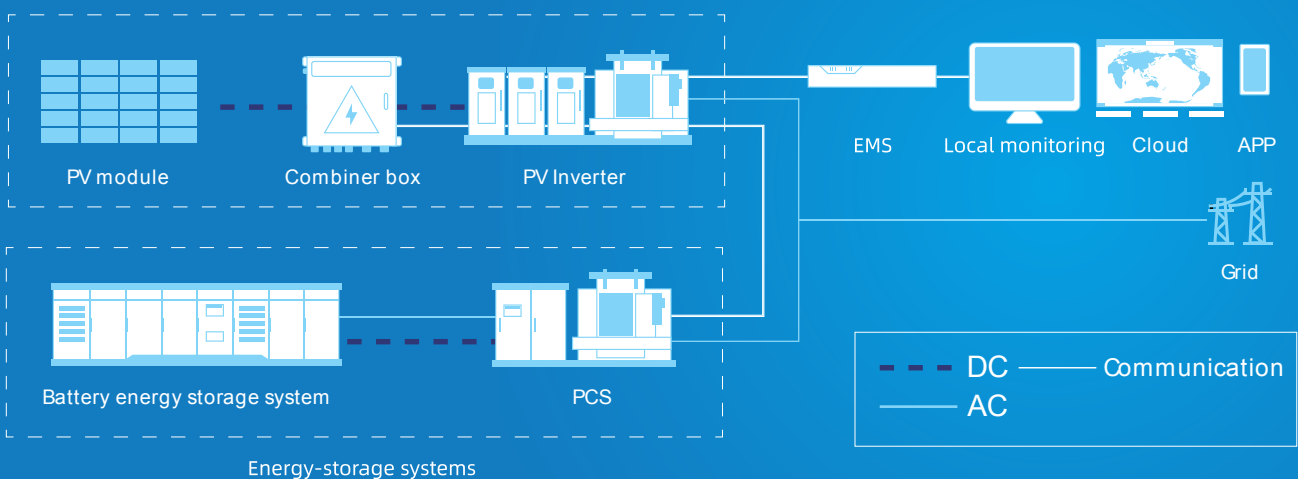


Large micro-grid



Large user side energy storage

### Topology diagram of system scheme



### Scheme characteristics

- AC coupling, centralized management, easy installation and maintenance.
- Independent AC/DC unit design & integrated station design
- Safe and reliable, layer upon layer protection from cell to system.
- Coordinated operation option with peak regulation and voltage regulation function.

# Container ESS — Product

1MW/2MW



## Features

- The AC coupling system design makes the system stronger.
- AC/DC integrated design, lower initial investment cost.
- Meet many application scenarios such as peak load shedding, demand management and microgrid construction.
- Support multiple sets of parallel use, covering a wide range of capacity.



## Specifications

	Item	VES-1MW/2MWH
<b>Battery Data</b>	Cell spec	LFP 3.2V/ 240Ah
	String Configuration	12P 12S
	Number of strings	12
	DC Rated Energy	2.212MW
	Usable Energy	2.1MW
	Rated voltage	768V
	Voltage Range	646.2-852VDC
<b>AC Data</b>	Rated Grid Voltage	400Vac, 3P+PE
	AC Current	1440A
	Grid Voltage Range	400vAC (+/- 15%)
	Nominal AC Output Power	1000kW
	AC PF	-1 to 1 leading or lagging (Controllable)
<b>General Data</b>	Enclosure Rating	IP55
	Operating Temperature	-20 to +50 Celsius (derating of Inverter at 45 degrees)
	Relative Humidity	0-95% (non-condensing)
	Max working altitude	3000m
	Cooling	DC HVAC
Fire Protection	Aerosol	

# Container ESS — Product

2MW/4MW



## Features

- The AC coupling system design makes the system stronger.
- AC/DC integrated design, lower initial investment cost.
- Meet many application scenarios such as peak load shedding, demand management and microgrid construction.
- Support multiple sets of parallel use, covering a wide range of capacity.



## Specifications

	Item	VES-2MW/4MWH
<b>Battery Data</b>	Cell spec	LFP 3.2V/ 240Ah
	String Configuration	23P 12S
	Number of strings	23
	DC Rated Energy	4.239MW
	Usable Energy	4.027MW
	Rated voltage	768V
	Voltage Range	646.2-852VDC
<b>AC Data</b>	Rated Grid Voltage	400Vac, 3P+PE
	AC Current	2880A
	Grid Voltage Range	400vAC (+/- 15%)
	Nominal AC Output Power	2000kW
	AC PF	-1 to 1 leading or lagging (Controllable)
<b>General Data</b>	Enclosure Rating	IP55
	Operating Temperature	-20 to +50 Celsius (derating of Inverter at 45 degrees)
	Relative Humidity	0-95% (non-condensing)
	Max working altitude	3000m
	Cooling	DC HVAC
Fire Protection	Aerosol	

# Container ESS — Product

4MW/8MW



## Features

- The AC coupling system design makes the system stronger.
- AC/DC integrated design, lower initial investment cost.
- Meet many application scenarios such as peak load shedding, demand management and microgrid construction.
- Support multiple sets of parallel use, covering a wide range of capacity.



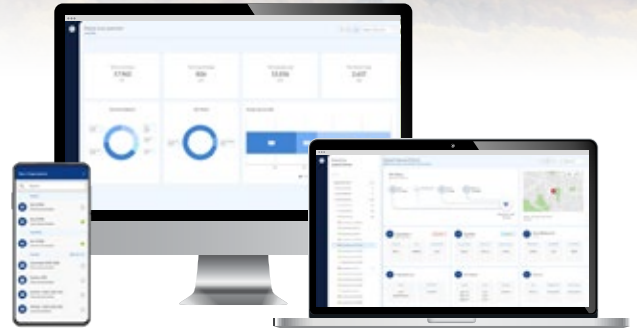
## Specifications

	Item	VES-4MW/8MWH
<b>Battery Data</b>	Cell spec	LFP 3.2V/ 240Ah
	String Configuration	46P 12S
	Number of strings	46
	DC Rated Energy	8.478MW
	Usable Energy	8.054MW
	Rated voltage	768V
	Voltage Range	646.2-852VDC
<b>AC Data</b>	Rated Grid Voltage	400Vac, 3P+PE
	AC Current	5760A
	Grid Voltage Range	400vAC (+/- 15%)
	Nominal AC Output Power	4000kW
	AC PF	-1 to 1 leading or lagging (Controllable)
<b>General Data</b>	Enclosure Rating	IP55
	Operating Temperature	-20 to +50 Celsius (derating of Inverter at 45 degrees)
	Relative Humidity	0-95% (non-condensing)
	Max working altitude	3000m
	Cooling	DC HVAC
	Fire Protection	Aerosol



# Monitoring + Control

Valen provides an agnostic, all-encompassing remote monitoring and management platform to track, analyse and optimise your telecommunications sites' performance. We offer an array of tools to help maximise the efficiency of your sites' power supplies and ensure that they run efficiently and uninterrupted, resulting in cost savings and a reduced carbon footprint.



## PRIMARY BENEFITS

**Energy utilization:** Remote scheduling management, and monitoring of passive equipment, such as batteries, generators and solar panels using insight based analytics.

**Site uptime:** Productivity maximisation that results in minimal energy loss, power drops, technical malfunctions, service disruptions, and regulatory fines.

**Sustainability:** Improving renewable energy utilisation, preventing unnecessary consumption of fossil fuels, and reducing carbon footprint and environmental impact.

**Cost Saving:** Save costs and reduce service roll-outs. Make informed decisions to manage efficiently

## VALEN'S SOLUTIONS

**Smart Battery (BMS):** Our two-pronged monitoring and management solution includes both battery tracking technology to mitigate theft and monitoring technology to track battery health while improving longevity and overall efficiency.

**Network Operations Center (NOC):** A solution that offers enhanced network visibility across an organisation's site parameters, allowing event management and remote site control.

**Security Enforcement:** A multi-level security system armed with real-time alerts and CCTV cameras, reducing breach and theft risk to near zero.

**Colocation Management:** An integrated platform that aggregates energy consumption information for multiple tenants and offers efficient management and smart billing capabilities.

# National Coverage

With warehouses located strategically, Valen offers fast and efficient delivery as well as superior service our clients have come to know and depend on.

