

# *SUNSYS Energy Storage Solutions*

Customized, turnkey and fully tested



When **energy** matters



# Energy storage

is at the center of the energy transition

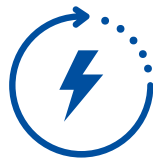
Supporting and maximizing the efficiency of renewable energies and reducing the CO<sub>2</sub> emissions.



**REN  
integration**



**Energy  
cost saving**



**Grid  
reinforcement**



**Grid  
resilience**



**CO<sub>2</sub> emission  
reduction**

For reducing the costs of electricity, improving the resilience of your power grid, or to facilitate access to electricity, energy storage solutions are easy and quick to deploy.

Energy storage solutions are complex. Based on the latest Lithium ION battery technology they are capable of operating while connected to the grid or completely independently. They require the correct power conversion, switching technology, protection devices and AC and DC monitoring to operate effectively. These cutting edge technologies will need to be fully integrated and managed by an advanced software system, able to operate both locally and remotely.

**If safety is an everyday obsession, service continuity, resilience and system lifetime are becoming a major demand to secure end user investment.**



Socomec has been developing energy storage technologies and solutions for 10 years, experimenting with pioneering customers and energy organizations. With more than 180 storage systems operating around the globe, Socomec has developed a wealth of experience in many different applications: renewable energy integration, resilient microgrids, isolated microgrids, grid resilience for EV charging and energy saving and resilience for commercial & industrial buildings.

**Your partner for cutting-edge energy storage technologies**

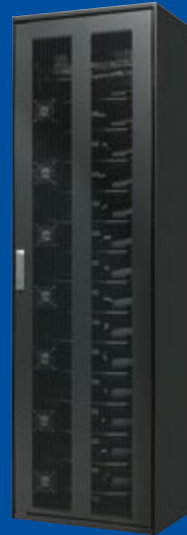
# Your custom battery energy storage system based on standard equipment



SUNSYS 199

## 1 SUNSYS PCS<sup>2</sup>

SUNSYS bi-directional power converters from 66 to 200kVA, for on-grid and off-grid applications, with or without transformer



SUNSYS 192

## 2 SUNSYS B-Cab

SUNSYS Lithium-ion battery racks, up to multiple MWh, BBMS integrated, power supply box

Multiple battery brands can be used :



SUNSYS 288

## 3 SUNSYS CM-Cab

SUNSYS Control Module cabinet with metering and power monitoring, battery data logging, islanding controller (for resilient microgrids) and remote management

**Custom design possible depending on the storage services, according to customer requirements**



SUNSYS 283

## 4 SUNSYS AC-Cab

SUNSYS AC cabinet with surge protection, power monitoring, power switching and ground connection for off-grid applications

**Custom design possible depending on the different sources of the microgrid, with all needed switches and power measurements**



SUNSYS 285

## 5 SUNSYS DC-Cab

SUNSYS DC cabinet with ultra-rapid fuse protection, insulation monitoring and power switching

**Custom design possible depending on the type of battery and the voltage level**



SUNSYS 284

## 6 SUNSYS BPS-Cab

SUNSYS Battery Power Supply with fuse protection

**Custom design possible depending on the type of battery and the number of racks**

# Custom solutions, based on standard technology

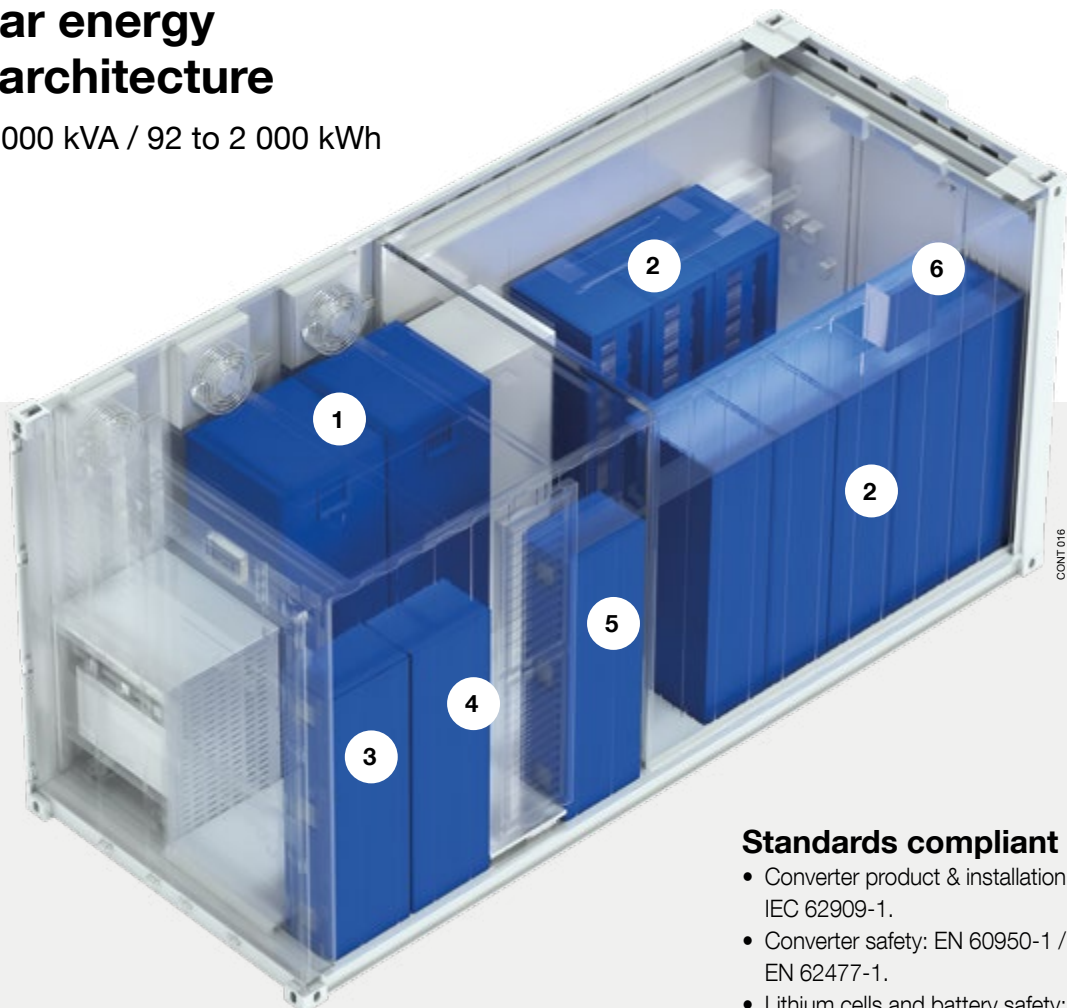
Socomec customized solutions are built on advanced system architecture, considering mechanical, electrical, thermal and EMC dimensions. Whatever the configuration we propose, it has been tested and documented, to ensure safety, system performance and lifetime.



Each Socomec solution is delivered with the complete documentation, undergoes specific factory acceptance tests, and is commissioned by our expert service team.

## A modular energy storage architecture

From 66 to 1 000 kVA / 92 to 2 000 kWh



**Get all benefits of standardization, while getting the customization level your application deserves**

Qualified equipment, designed to work together in multiple configurations, easier to select and operate, shorter lead times, competitive, and always standard compliant.

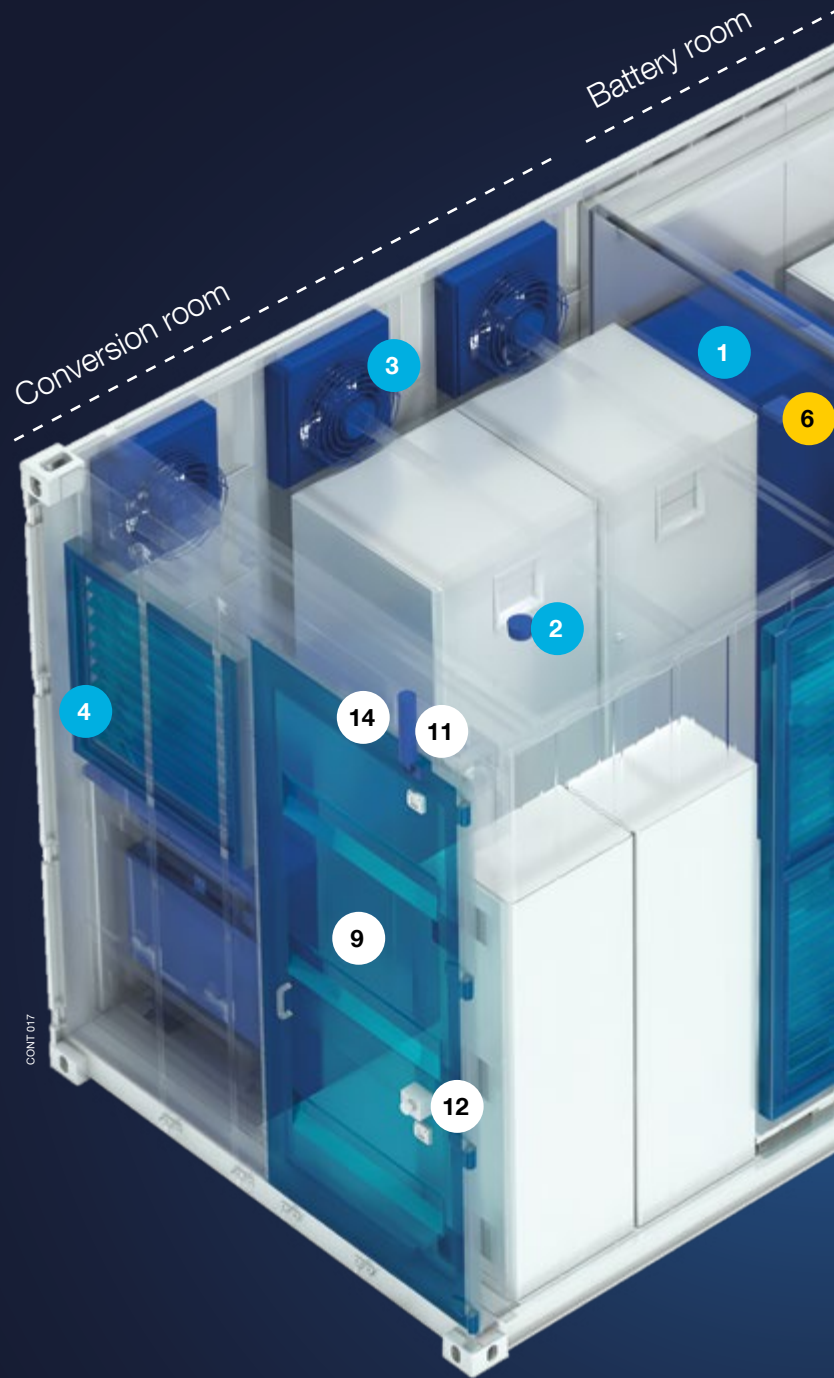
### Standards compliant

- Converter product & installation: IEC 62909-1.
- Converter safety: EN 60950-1 / A2 ; EN 62477-1.
- Lithium cells and battery safety: IEC 62619.
- EMC: EN 61000-3-11: EN 61000-3-12 / EN 61000-6-2 / EN 61000-6-4.
- Interconnection & interoperability: IEEE 1547.
- Communication protocol : SunSpec, Modbus.
- Grid code: contact us to discuss your specific grid code requirement.

# High quality container integration

Our container integration is an all-in-one integrated solution, limiting on-site preparation and installation time. The full container configuration is ready to connect to the grid, and undergoes factory acceptance tests and quality process.

The choice of maritime ISO container allows the battery energy storage system to be shipped all around the globe, and provides a highly robust technical room.



- 1 Battery room cooling system
- 2 Temperature and humidity sensors
- 3 Air extractor
- 4 Ventilation grill
- 5 Fire safety system control
- 6 Fire safety system detection
- 7 Fire safety system extinction
- 8 Fire safety system lighting
- 9 Door to conversion room with panic bar
- 10 Door to battery room with panic bar
- 11 External indicator lighting
- 12 Emergency stop button
- 13 Metallic floor protection
- 14 Emergency lighting



**23 standard configurations**  
available for on-Grid and  
off-Grid applications.

		Energy							
		91 kWh	183 kWh	274 kWh	365 kWh	457 kWh	548 kWh	639 kWh	731 kWh
Power	66 kVA	10ft	10ft	10ft					
	100 kVA		10ft	10ft	10ft	20ft			
	132 kVA		10ft	10ft	10ft	20ft			
	200 kVA			10ft	10ft	20ft	20ft		
	264 kVA				20ft	20ft	20ft	20ft	
	400 kVA					20ft	20ft	20ft	20ft

**And much more on request,**  
including 40" versions!

# Pre-configured 10” and 20” containers, and engineering on request for other sizes

## 10ft container

From 66 to 200kVA and 91 to 365kWh



## 20ft container

From 100 to 400kVA and 457 to 731kW



## 40ft container

From 400 to 1000kVA and 731 to 2000kWh

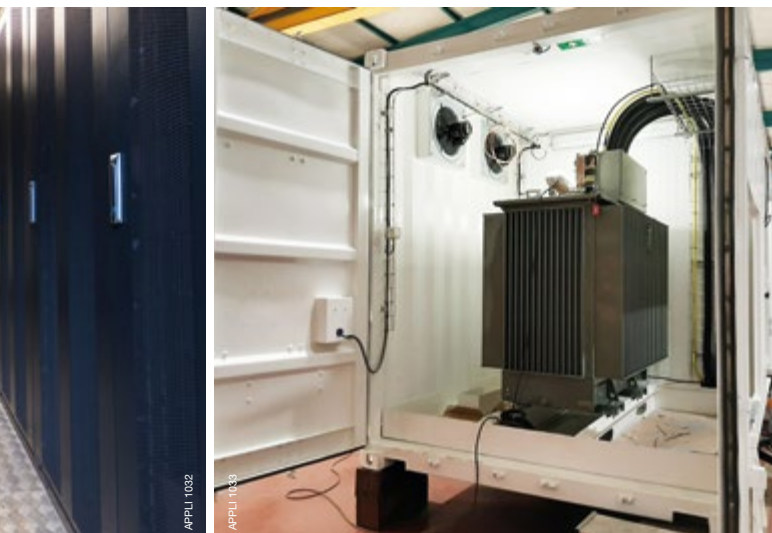
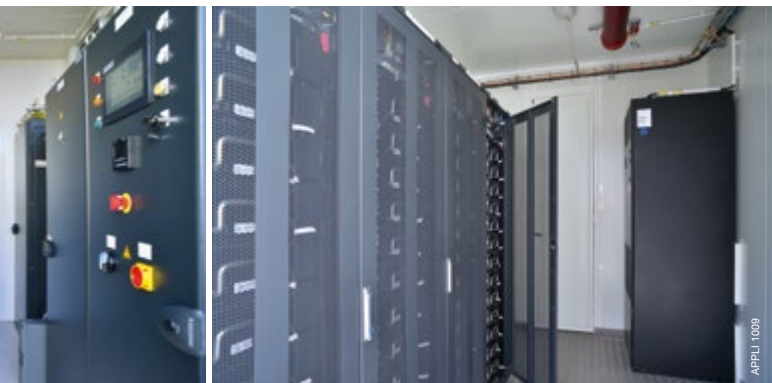
Custom design for specific demand or dimensioning



To discover our battery energy storage container, scan the QR code







## Our standard container solution can be adapted to meet specific requirements

- **Extreme external ambient conditions**, for example high level of container isolation, cooling system redundancy, protection against saline environments...
- **PV installation integration**, hosting of an additional cabinet for the conversion system and the protection devices of the solar panels.
- **Integration of a transformer** for a direct connection to medium voltage.
- **On demand container design** for hosting specific models and/or sizing of batteries.
- **Integration of specific AC paralleling cabinets** for distribution, protection and control of the different production sources of the electrical installation.
- **Integration of 3rd party devices** for control & automation of all the battery energy storage system.
- **And obviously, specific colors or branding**, required by the customers.



SITE 1102

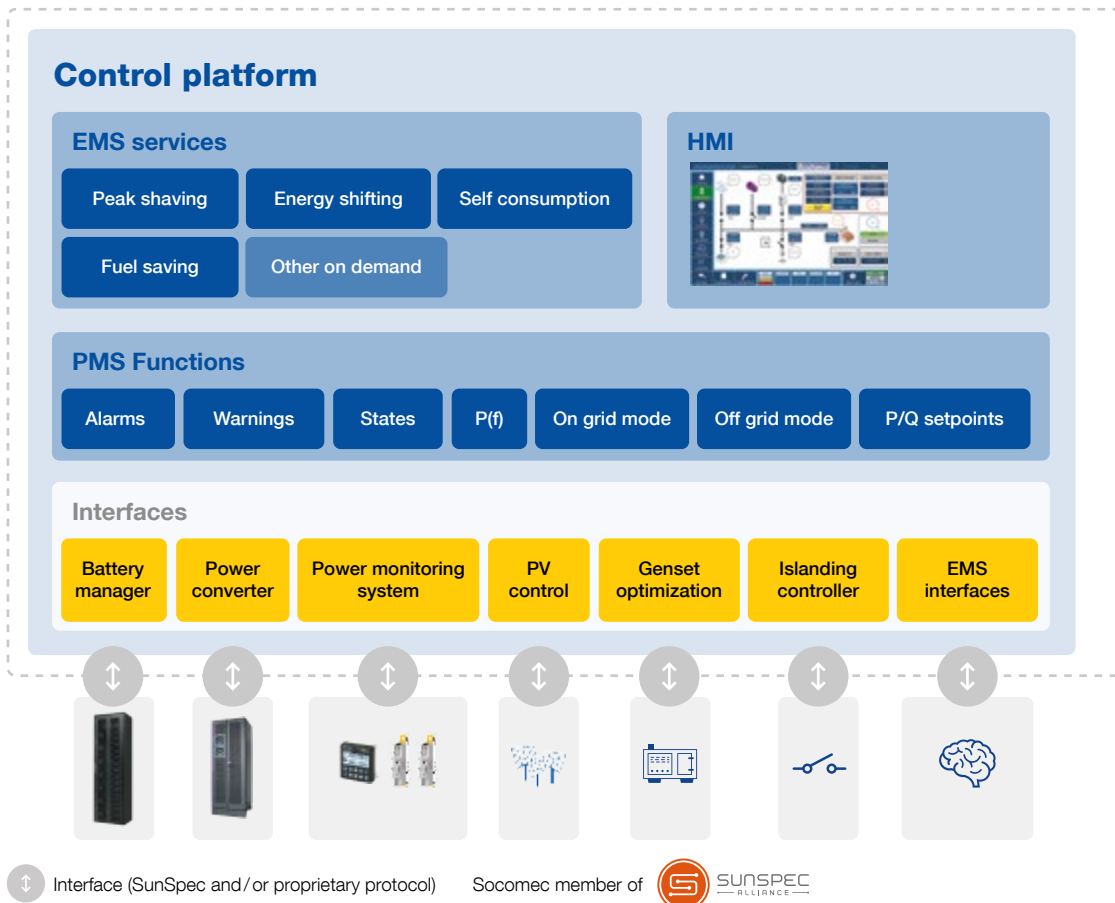
# Open control platform

Socomec has developed a modular and flexible platform which is the brain of your energy storage solution.

Whether you need a complete solution including EMS functions or you have your own EMS, the control platform offered by Socomec will meet your expectations.

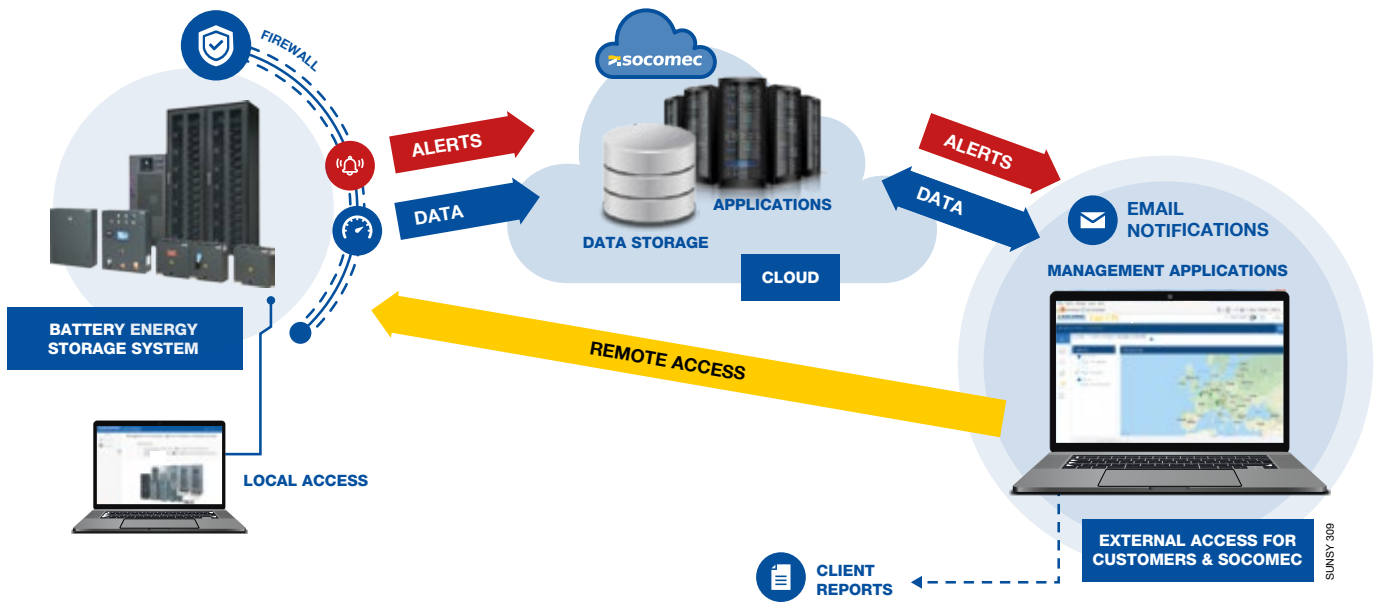
## Local management

Included in the control module cabinet, our control platform is composed of advanced equipment for complete monitoring and management of the energy storage system.



SUNSYS 307





## Remote management

The availability of your battery energy storage system is critical. No matter where it is located, we can manage it.

### Remote access services:

- **Data collection** for failure alert, reporting and proactive maintenance.
- **Technical support** for preparation commissioning, troubleshooting and software updates.
- **Real-time monitoring** for constant control of your energy storage system.



## Mobile energy storage

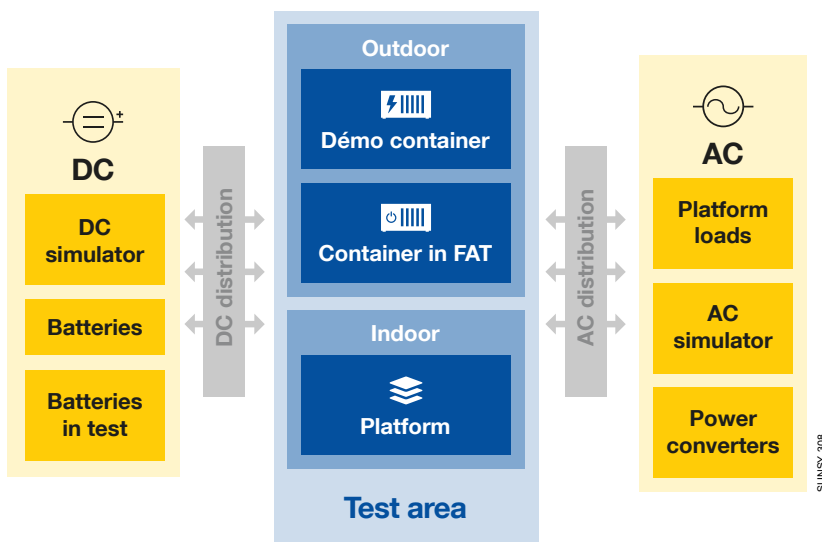
Socomec has released a specific mobile storage solution to replace or work with a diesel genset: SUNSYS Mobile. This solution was co-developed with IBS, an independent battery manufacturer for mobility and is ideal for temporary applications where a clean energy source is required such as events, emergency deployment or construction sites. Fully plug & play, this containerized solution can be transported by land or sea and is operational in less than 60 minutes.

For more information, you can contact [mobile.storage@socomec.com](mailto:mobile.storage@socomec.com)









# Dedicated engineering and project management team for energy storage solutions

**Our expertise:**  
a wide range of skills



Socomec testing platform

-   
Electrical
-   
Mechanical
-   
Thermal
-   
Automation
-   
Battery technology
-   
Communication & IOT

# Working together to co-design your project

You have a project, requirements and objectives.

We have a team, skills and a depth of experience.

Together, we will succeed with your project.



## Our workforce: a complementary set of profiles

- **Electro-mechanical engineers** to design cutting-edge energy storage architectures.
- **Automation engineers** to develop energy storage control systems.
- **Battery experts** to provide advanced analysis for energy storage solutions.
- **Dedicated customer resources** to manage the project from design to commissioning.
- **Service experts** to carry out the commissioning and to support customers for operation.



## Our means: high investment to provide qualified solutions

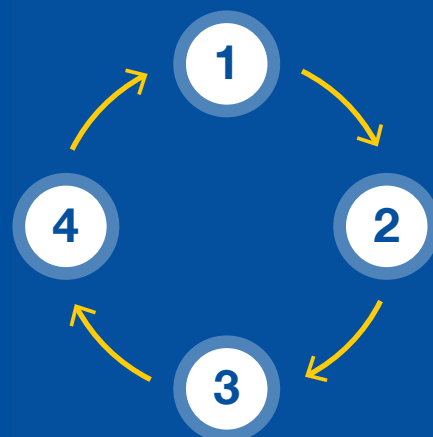
- **Demonstrators** to design and test new services in real operating conditions.
- **Socomec testing platform** to lead factory acceptance tests of the complete customers storage solution (capability to test up to 4 containers in parallel):
  - Two independents 400kW power grid.
  - Islanding possibility.
  - AC and DC simulators to generate grid events and batteries.
  - Multiple loads to simulate customer facilities.
- **External tools:** Socomec has developed partnerships with several external laboratories or grid operators to carry out additional tests.

Contact us to visit our test and qualification facilities.



## Your benefits

- **Custom design:** solution adjusted as closely as possible to your demand.
- **Optimised cost:** all skills and tools are mastered internally.
- **High quality:** industrial tool and process ISO 9001 certified.
- **Reliability and availability:** thanks to proof load test and remote support.



## A proven process to support customer's projects

Based on our experience and battery energy storage achievements, Socomec has designed a process to support customer projects

- 1 Pre sales support**
  - Analysis of customer requirements.
  - Pre-technical design.
  - Quotation of the technical solution.
- 2 Project design and realization**
  - Allocation of a project manager to lead the project.
  - Design of the complete solution by co-engineering with the customer.
  - Production and procurement of all equipment.
- 3 Tests and commissioning**
  - Factory acceptance tests.
  - Site inspection.
  - Site acceptance tests and commissioning.
  - Documentation and customer training.
- 4 Operating and maintenance services**
  - Troubleshooting, data management and reporting.
  - Periodic on-site inspections and preventive maintenance.
  - Warranty management.

# Mastering energy storage

Your partner for cutting-edge energy storage technologies



SYD/1735

## Our offers



GAMME 810

Looking for efficient technologies for your energy storage solutions?


**Storage inverters, AC & DC switching and protection, AC & DC power monitoring**



GAMME 773

Need a reliable partner to provide easy to use and competitive equipment, to deliver safe and standard compliant storage systems.

**Large range of energy storage systems ready to be connected**



SUNSY 289

Are you looking for experience and expertise to provide turnkey solutions and services for complex microgrids?

**Energy storage turnkey customized solutions**

## 3 main reasons to choose Socomec

### 1 Expertise

Based on our expert knowledge of Power Conversion, Power Switching and Power Monitoring technologies, we have been developing energy storage solutions for in excess of 10 years. Our expertise enabling us to provide systems that maximise service continuity, power quality and energy efficiency with no compromise on safety.

### 2 Experience

Because we believe innovation is about working closely with customers, Socomec has successfully contributed to major energy storage demonstrators (Interflex, Nice Grid, REIDS, Klinkenberg).

This experience has provided extensive knowledge of usages and applications for: PV integration to the grid, scheduled grid disconnection - without interruption to supply throughout the islanding process and microgrid migration from 100% of energy being provided by fossil fuels to 100% REN + storage.

### 3 Proven technologies

Socomec is proud to share our experience and for our solutions to continually evolve. Beyond all of the laboratory tests we perform we have in excess of 180 systems operating around the globe. Our experience continues to improve the stability and reliability of these cutting edge technologies.



SITE 1103

InterFLEX

NICE GRID  
A SMART SOLAR DISTRICT

REIDS

KLINKENBERG

# Socomec: our innovations supporting your energy performance

**1** independent manufacturer

**3,600** employees  
worldwide

**10** % of sales revenue  
dedicated to R&D

**400** experts  
dedicated to service provision

## Your power management expert



POWER  
SWITCHING



POWER  
MONITORING



POWER  
CONVERSION



ENERGY  
STORAGE



EXPERT  
SERVICES

## The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

## A worldwide presence

**12** production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

**28** subsidiaries and commercial locations

- Algeria • Australia • Belgium • China • Canada
- Dubai (United Arab Emirates) • France • Germany
- India • Indonesia • Italy • Ivory Coast • Netherlands
- Poland • Portugal • Romania • Serbia • Singapore
- Slovenia • South Africa • Spain • Switzerland
- Thailand • Tunisia • Turkey • UK • USA

**80** countries

where our brand is distributed

### HEAD OFFICE

#### SOCOMECC GROUP

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