Totally Integrated Power – SIESTORAGE

The modular energy storage system for a reliable power supply

Grid evolution creates new challenges



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*contraction of producer and consumer

SIESTORAGE modular concept Four components into an innovative solution





Inverter cabinet (1,000 x 600 x 2,200 mm)

 4 inverter modules and related control equipment

Each module:

- V nominal: 400 V
- I nominal: 170 A

Control cabinet

• 1 x HMI (Human

(800 x 600 x 2,200 mm)

- S nominal: 118 kVA
- P nominal: depending on the battery type

1 x control unit (SCU)

Machine Interface)

1 x Ethernet switch

0 - 0

0

Grid connection cabinet (800 x 600 x 2,200 mm)

SIEMENS

- 400 V AC power distribution
- Switching system
- Power connection to the grid
- Filtering system
- Auxiliary transformer

Battery cabinet (600 x 650 x 2,200 mm)

Content example*:

- 14 modules
- 1 BMS (Battery Management System)
- Power: 90 kW
- Energy: 45 kWh

Depending on supplier

Engineering

What is energy storage? Large-scale batteries for industrial applications.

Modular, scalable arrays of proven technologies integrated at utility and industrial scale.



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Advantages of Li-ion batteries



SIESTORAGE modular concept 12 PS SLD



Fluence brings unmatched experience at scale from the partner you can trust

EXPERIENCE

10+ years of experience in energy storage from two proven industry pioneers

- 1.9
- World's leading storage provider Deployed or been awarded 60+ projects, in 16 countries, 500+ MW

SCALE

Complete technology and service offerings delivered worldwide

- Proven technology platforms that address full spectrum of applications
- Delivery & integration in 160 countries
- Comprehensive services including financing

THE RIGHT PARTNER

Deep understanding of modern power markets, customer needs, and local market challenges

- Collaborate with customers to solve their energy challenges
- Avoid pitfalls of inexperienced packagers and integrators
- Strong financial backing and industry staying power

Created and backed by two industry powerhouses





Fluence is the global leader in energy storage



Applications of SIESTORAGE Combination of various applications leads to an economic solution



Large field of application areas for utilities, network operators, industry and infrastructure

SIESTORAGE is also suitable for:

- Supplying continuous power for sensitive industrial processes
- Energy-efficient buildings
- Isolated sites with limited power access
- Autonomous microgrids supplied with diesel genset
- Public transportation
- Electromobility

Germany, VEO (Vulkan Energie Oderbrücke GmbH) The steel plant of Eisenhüttenstadt depends on it



2,8 MW 1080 kWh SIESTORAGE system

Main applications

Black start of a gas turbine

Turnkey solution



Germany, Hydroelectric Power Plant SIESTORAGE for Frequency Regulation

10 MW 13 MWh SIESTORAGE system

Main applications

Network stabilization for decentralized power

Turnkey solution





Netherlands, SIESTORAGE for Primary Reserve Power Very compact design = 27 ft Container only

1.6 MW 1.3 MWh SIESTORAGE system

Main applications

Primary Reserve Power

Turnkey solution 27" container



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Enel

Distribuzione

Italy, Enel Distribuzione S.p.A., Isernia SIESTORAGE in a smart grid

1 MVA 500 KWh SIESTORAGE system

Main applications

Network stabilization for decentralized power / integration of renewables

Turnkey solution

We need better ways to store energy for our pilot projects, and because Siemens was strongly committed to investing its expertise and efforts into the new energy storage system, we chose Siemens from among seven bidders.

Paola Petroni Head of Network Technologies, Infrastructure and Networks Division

STESTORAGE



Renewable Integration

EDPR Romania 1.4 MW / 1 MWh Wind Farm

Services:

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 Output Stabilization & Peak Shaving

Impact:

- Reduction of forecast errors
- Reactive power compensation
- Grid code compliance

30 MW of energy storage for San Diego Gas & Electric, California, United States

Largest energy storage project in North America

- 30 MW / 120 MWh
- Contract to online in 6 months
- Sited on 1 acre, where a power plant could not be permitted

Generation Enhancement

Southern California Edison Long Beach, California, United States 100 MW / 400 MWh

SERVICES

- Local capacity
- Peak/Off-peak management
- Ramping/ Ancillary Services

IMPACT

- Competitive selection over thermal gas peaker
- Maximizes transmission
- Meets emission targets

World's largest contracted energy storage project

Island of Ventotene, ENEL, Italy: SIESTORAGE and SICAM Microgrid Manager – Off-grid electrification and sustainable microgrid

500 kW 600 kWh SIESTORAGE system

~15%
Fuel savings
~-55%
gen-set operating hours

Improved grid stability, reduction of CO2 and maintenance costs



SIEMENS

Solution from a single source

We attend you within all the phases of the project, from engineering to installation and commissioning, and we ensure a reliable and competent local support – from planning to after-sales service

- Global experience in project life cycle management
- Single source from engineering to installation and commissioning
- Application expertise





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Engineering



Power management system including renewable energy generation and SIESTORAGE

- Standardized communication interfaces for connection with your SCADA system
- Analysis and improvement of energy efficiency
- Remotely controlled equipment
- View of all equipment in real time
- More transparency (e.g. energy mix) thanks to operational data
- Possibility to create a virtual power plant

Cost analysis and asset optimization

- Cost analysis, simulation of load and generation
- Technical and financial proposal (ROI calculation)
- Business cases are also dependent on the local regulation and on financial incentives regarding the protection of environment



Saving potential with asset optimization

This depends on the application, which therefore has to be accurately assessed as the first step:

Spinning reserve (power sale)

Peak load management

T&D deferral (grid relief)

Offset-diesel optimization

Contact page



Oğuzhan ÇAYIREZMEZ Sales Manager Mobile: +90 530 664 1802

E-Mail: oguzhan.cayirezmez@siemens.com

www.siemens.com/siestorage



Thank you..

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