News Release
Jan 27, 2016
GS Yuasa Corporation

# GS Yuasa Introduces LINE BACK Ω ES Power Conditioner for Charging and Discharging Storage Batteries with Rated Output of 100 kW

GS Yuasa Corporation (Tokyo Stock Exchange: 6674; "GS Yuasa") announced that the company introduced LINE BACK Ω ES, a new power conditioner for charging and discharging storage batteries with rated output of 100 kW. LINE BACK Ω ES is part of the power conditioner series for photovoltaic power generation with storage batteries having rated output ranging from 4.5 kW to 50 kW, which the company has been offering.

By combining the high-capacity 100 kW power conditioner with storage batteries, Ω ES can build a medium- to large-scale power storage system, making it best-suited for use during peak cutting of building and plant facilities and for power supply during emergencies. Customers may choose* from lithium-ion batteries and lead-acid batteries as storage batteries depending of their respective needs.

GS Yuasa will continue to address diverse needs for effective utilization of renewable energy and functional enhancement of disaster response facilities through sales of various power storage system led by Ω ES.

**[Features]**

**1. Effective utilization of the storage batteries installed in Ω ES and electricity generated by photovoltaic power generation**

By linking Ω ES and power conditioner for photovoltaic power generation, electricity from photovoltaic power generation can be effectively utilized not only in ordinary operation but also during power outage and it can offer electric power stably for long hours compared with the solo operation of Ω ES.

**2. Response to peak cutting system**

Sending input-output command from an external energy management system (hereinafter referred to as "EMS") to Ω ES enables charging-discharging control of storage batteries.

**3. Response to a wide range of storage capacity from 101 kWh to mega Wh**

Connecting multiple storage battery cabinets enables construction of a large-scale power storage system and charging and discharging of a large capacity of electric power.

**4. Selection of storage battery types**

Lithium-ion batteries and valve-regulated type stationary lead-acid batteries for cyclic application may be chosen*.

*The timing of introduction of the version installed with valve-regulated type stationary lead-acid batteries for cyclic application is yet to be determined.

[Overview]

1. Power conditioner

| | |
|---|---|
| Output capacity | 100kW |
| AC output voltage | 3 phase, 3 line 202V |
| DC voltage range | 0～600V |
| Independent operation output | 100kVA |
| External dimensions (W×D×H) | 900mm×900mm×1,900mm<br>(excl. channel base) |

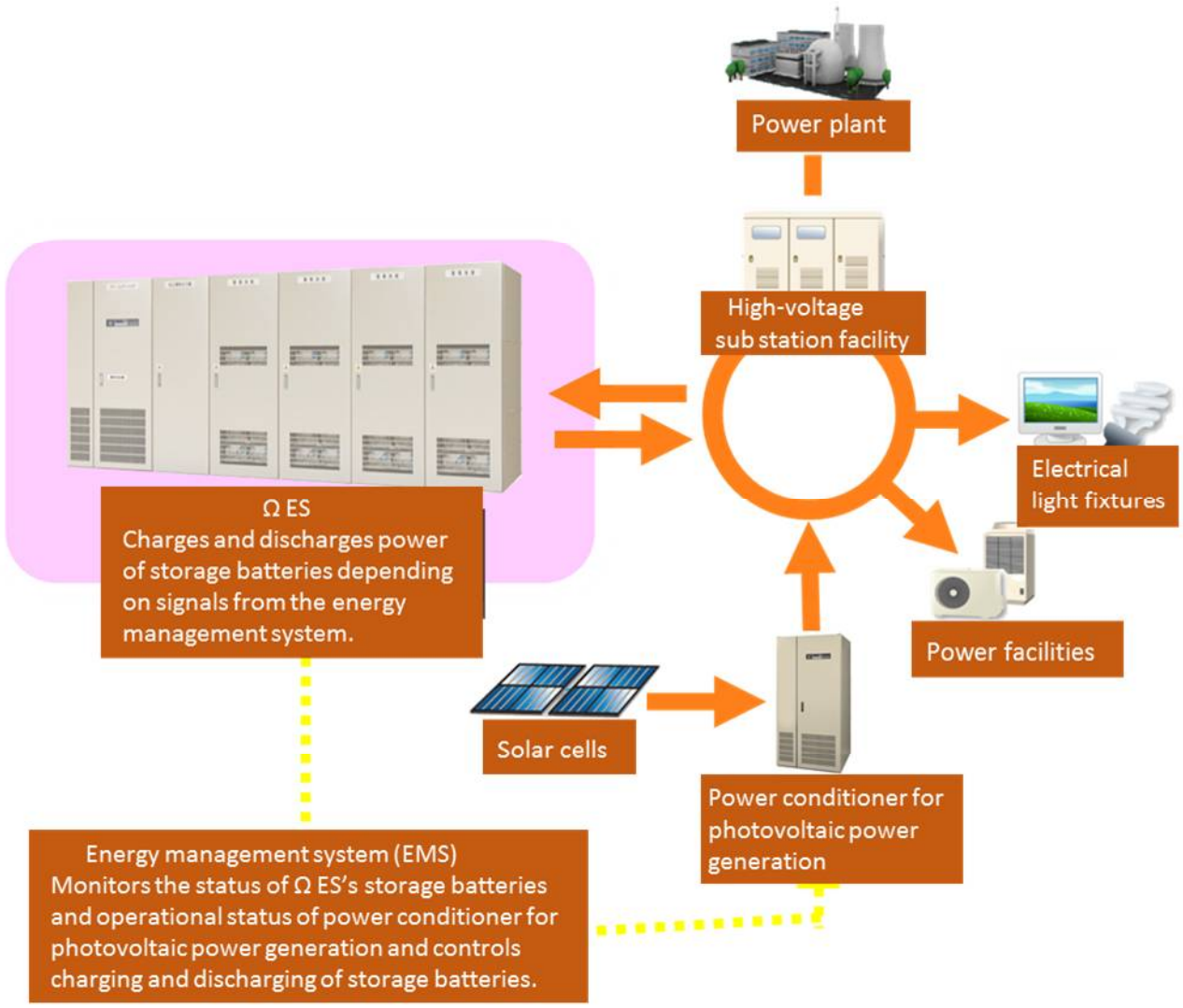
2. Industrial use lithium-ion batteries

| | |
|---|---|
| Storage battery series | LIM50 series |
| Cell count | 576 cells or more |
| Rated capacity | 101kWh or more |

3. Valve-regulated type stationary lead-acid batteries for cyclic application

| | |
|---|---|
| Storage battery series | SLR series (1000Ah) |
| Cell count | 216 cells or more |
| Rated capacity | 432kWh or more |

[System image diagram]




Continuous line: flow of electric power
Dotted line: flow of control signal

In addition to solar cells and power conditioner, the system aimed at effective utilization of renewable energy will be installed with EMS, which controls flow of energy.
EMS monitors operational status and storage status of the power conditioner for photovoltaic power generation and Ω ES in real time and sends charge or discharge signal according to the situation and Ω ES appropriately charges or discharges electric power based on the signal.

[Images]

1. Ω ES and storage battery cabinets


2. LIM50 Series industrial-use lithium-ion battery (12-cell module)


3. SLR Series valve-regulated stationary lead-acid battery for cyclic application (six-cell unit)