



SIEMENS

Totally Integrated Power

SIESTORAGE supporting large energy consumers



The challenge: Ensuring reliability and optimizing costs

Depending on their power contracts, many large energy consumers are faced with paying different prices at different times, with a premium for energy consumed during peak hours. In addition, they may also have to pay high penalties for exceeding their specified maximum demand – or in the worst case be cut off by the utility. Furthermore, some countries experience unreliable supply from the utility and are forced to regularly run on back-up diesel generation. With energy costs contributing a high percentage of overall production costs, and competitive pressure on market prices for consumer goods, large energy consumers are seeking ways to optimize the way they use energy.

The solution:

SIESTORAGE energy storage system

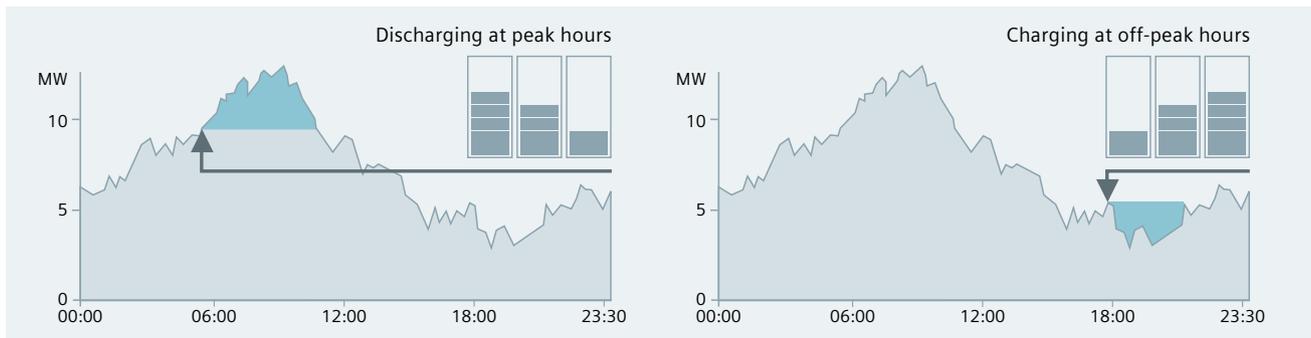
SIESTORAGE offers a reliable alternative power supply solution, being more economic and resource-efficient at the same time. The system comprises very fast Li-ion battery technology as well

as cutting-edge power electronics and automation to provide fast and accurate response services. SIESTORAGE can be seamlessly integrated into SCADA energy management and distribution management systems as well as into building or plant automation systems, allowing monitoring and programmable control that complies with operational or grid rules.

SIESTORAGE benefits from having a flexible modular design for sizing and scaling (from kW/kWh to MW/MWh sizes), and its redundant system architecture ensures a continuous and reliable power supply.

SIESTORAGE is supported by a comprehensive end-to-end expertise, including grid analysis, business case development, project planning, manufacturing, system integration, commissioning, and services. It can be installed in E-Houses, existing buildings, or even standard shipping-style containers.

[siemens.com/SIESTORAGE](https://www.siemens.com/SIESTORAGE)



Example of how SIESTORAGE helps to improve peak load management and cost efficiency by balancing supply and demand

Applications and customer benefits

SIESTORAGE enables multiple applications for large energy consumers while offering considerable economic benefits over its operational lifetime.

Improved asset performance with peak load management

Large consumers usually pay more for energy consumed at peak times. Often, they also have to pay demand charges when exceeding their specified maximum demand, even though their actual demand may be low. Not all production can be rescheduled, but SIESTORAGE allows power users to optimize energy utilization by consuming more energy during off-peak, low-demand times and injecting the stored energy to support the load during peak-priced or high-demand times, therefore considerably reducing high priced energy consumption.

Greener alternative to back-up diesel generation

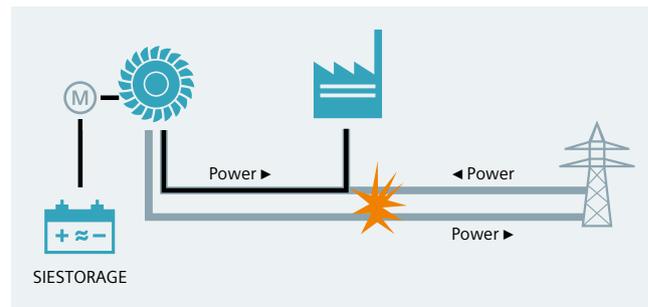
SIESTORAGE can act as a greener, more reliable alternative to back-up generation. Unreliable or no grid supply, rising fuel costs, and fuel supply chain challenges lead to rising production costs. SIESTORAGE provides an alternative to back-up diesel generation with low operating costs: It can either be a replacement or co-located to reduce ramping and to ensure smaller machines running closer to their operational design characteristics.

Optimized black-start capacity

Some customers use gas-fired power plants as back-up power. However, these machines require power to start, and in the event of a grid outage, an alternative or auxiliary power source is required. SIESTORAGE can provide black start functionality: By being online and charged, and designed with both active and reactive power components, it can provide a very fast-to-respond, reliable solution.

Use of own power generation from renewable sources

SIESTORAGE also helps prosumers (on- or off-grid) to better utilize their own power generation from renewable resources. SIESTORAGE compensates the volatility of renewable energy. It does so by either storing power to be consumed at a different time when it is most needed, e.g. when the demand or the price of energy is higher, or by charging and discharging to respond to surges and dips in renewable power availability, thus ensuring a smooth output to the load. Both of this contribute to the optimization of the energy costs.



Example of how SIESTORAGE can be used as auxiliary power supply to restart a power plant in the event of an outage

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