FREQCON

FREQCON IES Industrial Energy Storage and Control System

The most efficient and cost-effective solutions for renewable energy storage, peak power shaving, frequency regulation and even more applications.

FREQCON IES Applications

FREQCON IES allows the storage of unstable electric energy during wind and photovoltaic power generation and supplies this energy when it is needed. The energy storage system can work grid connected to smooth the power output of renewable power plants or as **base load power supply** to the public grid.

FREQCON IES can work as a **stable** voltage source within an **island grid** installation to integrate renewable energy sources and diesel generation without the danger of black-outs or brown-outs.

Our systems can be used for **peak power shaving** to reduce the energy cost for commercial applications. Energy cost for industrial consumers strongly depends on their peak power demand. Just use FREQSTORE IES to cut these high peak demands and pay less for your energy.

The system **provides frequency stabilization** of the public grid. To compensate fluctuations of power consumption and production in the grid, balancing power is needed. The FREQSTORE IES can provide balancing power as source and also as consumer. At the same time, the reactive power capability makes it useful for voltage control applications.

The **IES** system can be used for **energy smoothing** in order to benefit from energy price fluctuations.

Providing **harmonic compensation** to improve the grid voltage quality.

FREQCON IES supports **"low voltage ride through"** to zero grid voltage level and **"high voltage ride through"** up to 25% above nominal voltage.

The unit is able to serve as backup power supply during grid blackouts.

FRQCON IES Design Features

FREQCON IES is based on our **field proven** Next Generation Converter (NGC) technology. More than 15 GW of installed converter capacity and field experience of more than 20 years have proven the high reliability of our design. NGC´s **outstanding power quality** (THD<2%) and **low EME design** was certified for many applications. All components are sourced from well-known industrial brands with **world wide availability**.

- Equipped with a wide range of battery types (LiFePO4, LiFePO4yt, LiS, sodium-nickel) or optional with double layer capacitors
- **Active balancing**
  - Optimizes charging efficiency (4% better than by passive balancing)
  - Optimizes battery capacity (8% better than by passive balancing)
  - Increases maximum cycle capability (15 % better than passive balancing)
- High **dynamic response** of active and reactive power, harmonic compensation
- Industrial high speed communication device monitors more than **32,000 single battery cells**, life time data of cells recorded for more than **20 years**
- **100 Mbit communication interface** supporting **PROFINET**, **PROFIBUS**, **Modbus/TCP**, **DNP3**, **OPC, ETHERCAT** and **CAN-Bus**
- In accordance to all important communication standards, like **IEC 61850**, **IEC 60870-5-10X**, **IEC 61400-25** and others
- Easy to use **web based HMI** and alarm functions using SMS, Mail, and smart phone
- Wide temperature range (including **hot/cold climate**), **compact, water cooled design**
- Designed to meet CE, UL, CSA as well as standards and directives like IEC 62477-1, IEC 60204-1, IEC 60146-1-1, Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU and more
- **Modular** design, module sizes from 0.5 up to 3 MW
- **Low operational costs**

Scalable Design
5 MW/10 MWh storage application

Freqcon GmbH
Vethem 24
D-29664 Walsrode

Phone: + 49 (0) 5166 - 930 59-0
www.freqcon.com
Email: info@freqcon.com

customized solutions provided by FREQCON

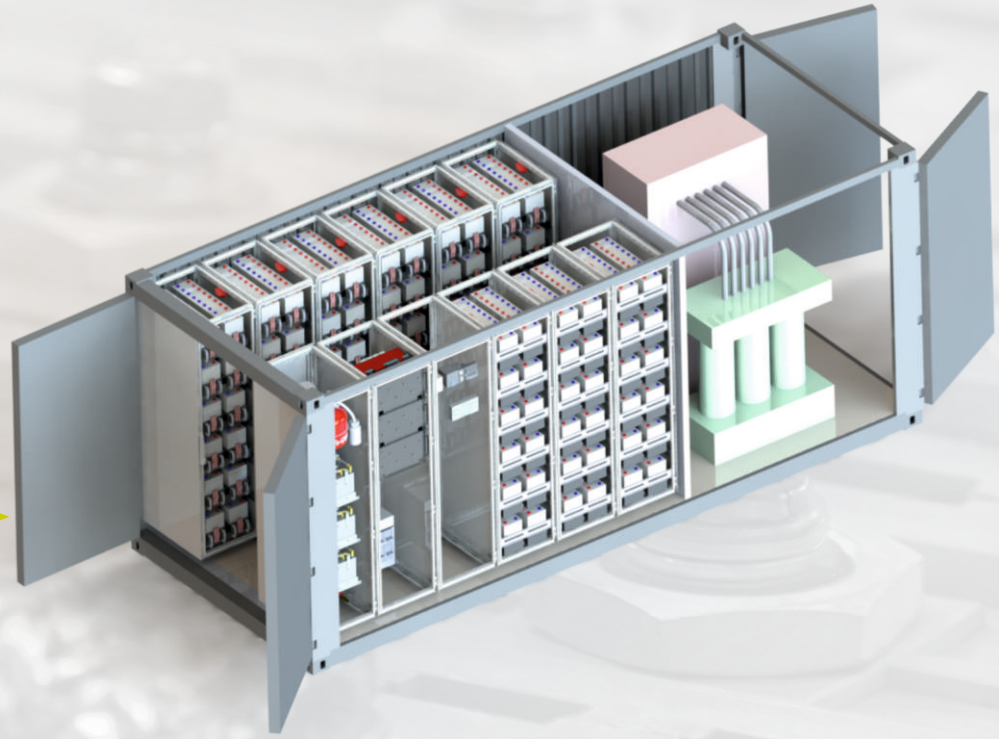
FREQCON

FREQCON IES Industrial Energy Storage

1.1 ... 1.5 MWh Energy Storage Container

The most efficient and cost-effective solutions for renewable energy storage, peak power shaving, frequency regulation and even more applications.

20 ft. ISO container



Access to power circuits and control cabinets

Freqcon GmbH
Vethem 24
D-29664 Walsrode

Phone: + 49 (0) 5166 - 930 59-0
www.freqcon.com
Email: info@freqcon.com

customized solutions provided by FREQCON