

Telecom UPS
Backup Overview

Gridedge



October 2016

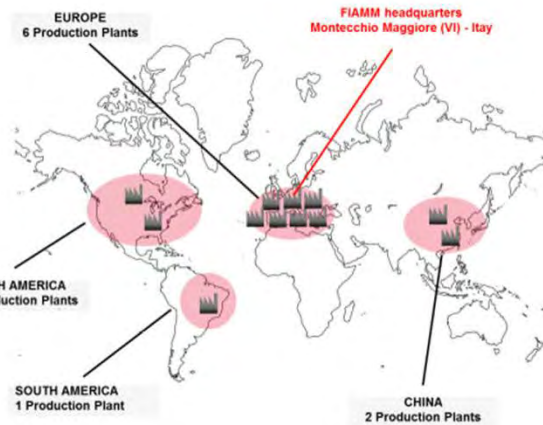
Energy for a sustainable future



**Energy
Valuable
Solutions**

FZ SoNick





Industrial Batteries

FIAMM Industrial Batteries offers a broad range of stationary batteries, designed to guarantee uninterrupted power supply in a myriad of applications.



Acoustic Devices

FIAMM Acoustic Devices is the global leader in the production and supply of horns for the safety of vehicle and people.



Oled

Astron FIAMM, a manufacturer of innovative lighting solutions with OLED technology, has placed its experience at the service of the automotive industry, offering light as a distinguishing element among the various brands and models.



Starter & Mobility Power Solutions

FIAMM Starter & Mobility Power Solutions was established with the aim of satisfying the mobility sector's current and future energy storage requirements.



Energy Storage

FIAMM Energy Storage is aimed to research and propose solutions for the grid optimization and for the planet's energy self-sufficiency thanks to innovative products and systems for energy storage.



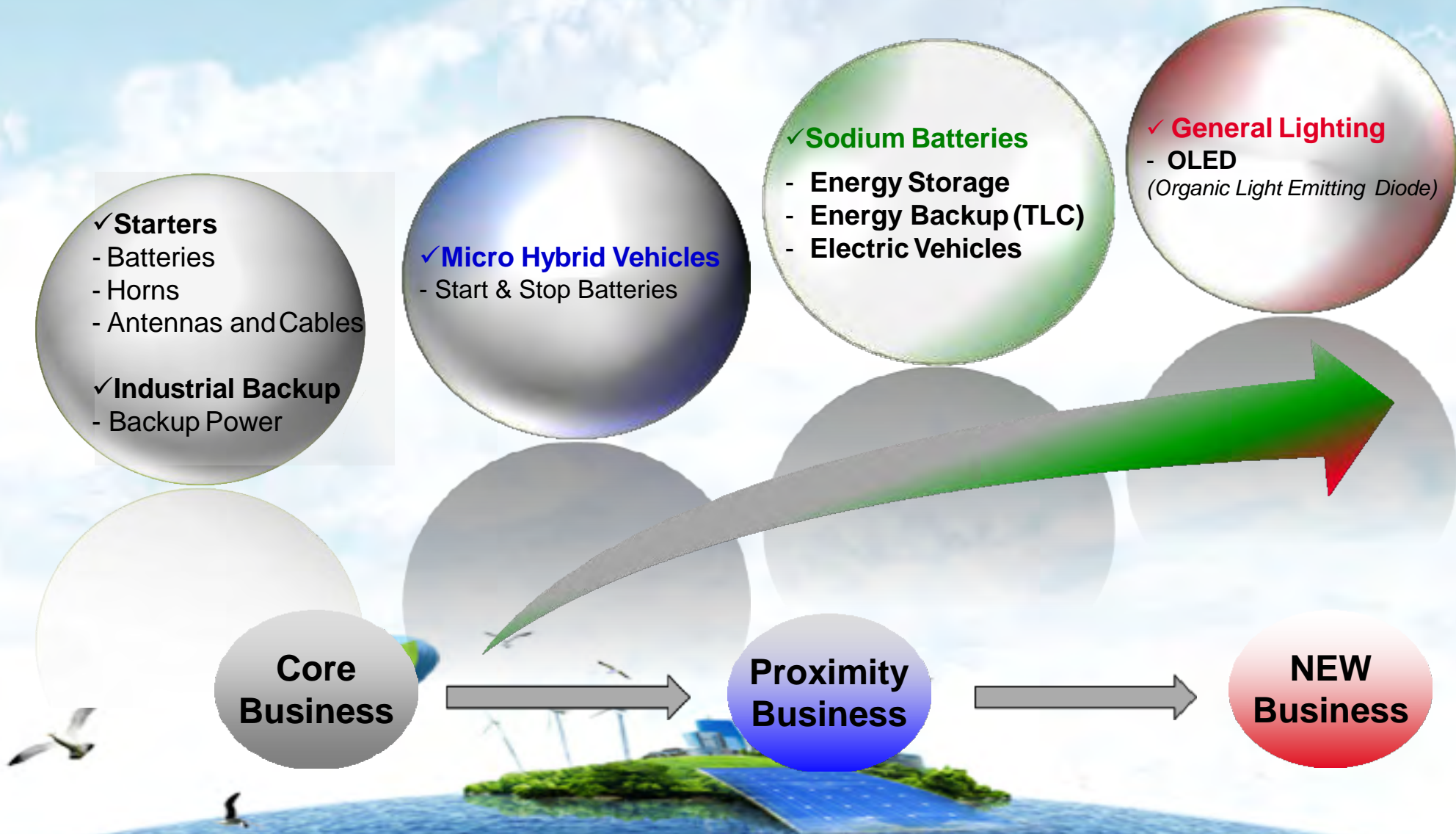
Antennas

FIAMM Antennas has been one of the main automotive antenna player in the European market for the last 25 years.

14
**PRODUCTION
PLANTS**

3.000
EMPLOYEES

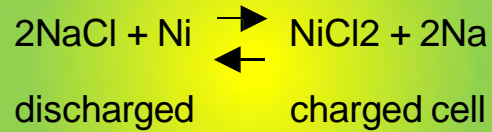
2015 Turnover
590 M€





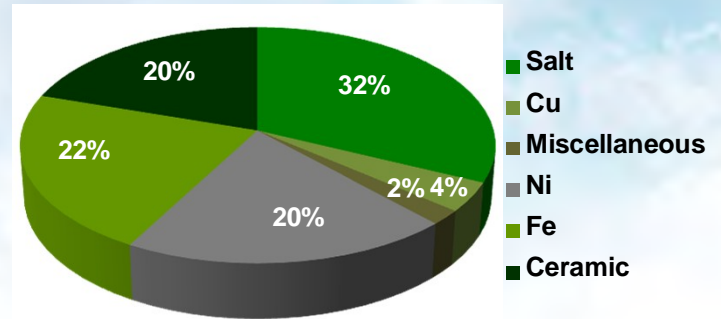
Performances

- ✓ **Temperature Immunity**
(-40 °C; +60°C)
- ✓ **Cycling Capability**
> 1.500 cycles - MOBILITY
> 4.500 cycles - ESS (80% DOD)
- ✓ **Battery energy density**
100-;120Wh/kg
150-190Wh/lit
- ✓ **Shelf life** (> 20 years)
- ✓ **No memory effect**



Safety

- ✓ **Intrinsically safe**,
electrochemical safety
- ✓ No gas emissions
- ✓ **No flammable materials**
- ✓ **No fire/water flood reaction**
- ✓ Industrial Process Control
- ✓ Tested in the field
(EV, TLC, ESS,...)
- ✓ BMS control
- ✓ Cell/Battery Mechanical case



Zero Impact Battery

- ✓ NO dangerous materials
- ✓ **100% recyclable**
- ✓ NO pollution materials
- ✓ NO gas emissions

Production



Applications

TR SoNick

ST SoNick

TL SoNick

for
TRAILER STORAGE

for
ENERGY STORAGE

for
ENERGY BACK-UP, UPS and
TELECOMS

EV SoNick

RW SoNick

for
SUSTAINABLE MOBILITY

for
Railways ENERGY BACK-UP



SoNick Technology

The sodium nickel technology behind FIAMM SoNick battery

Energy density:

120 Wh/kg at battery

Outside temperature range:

-40° C / +60° C

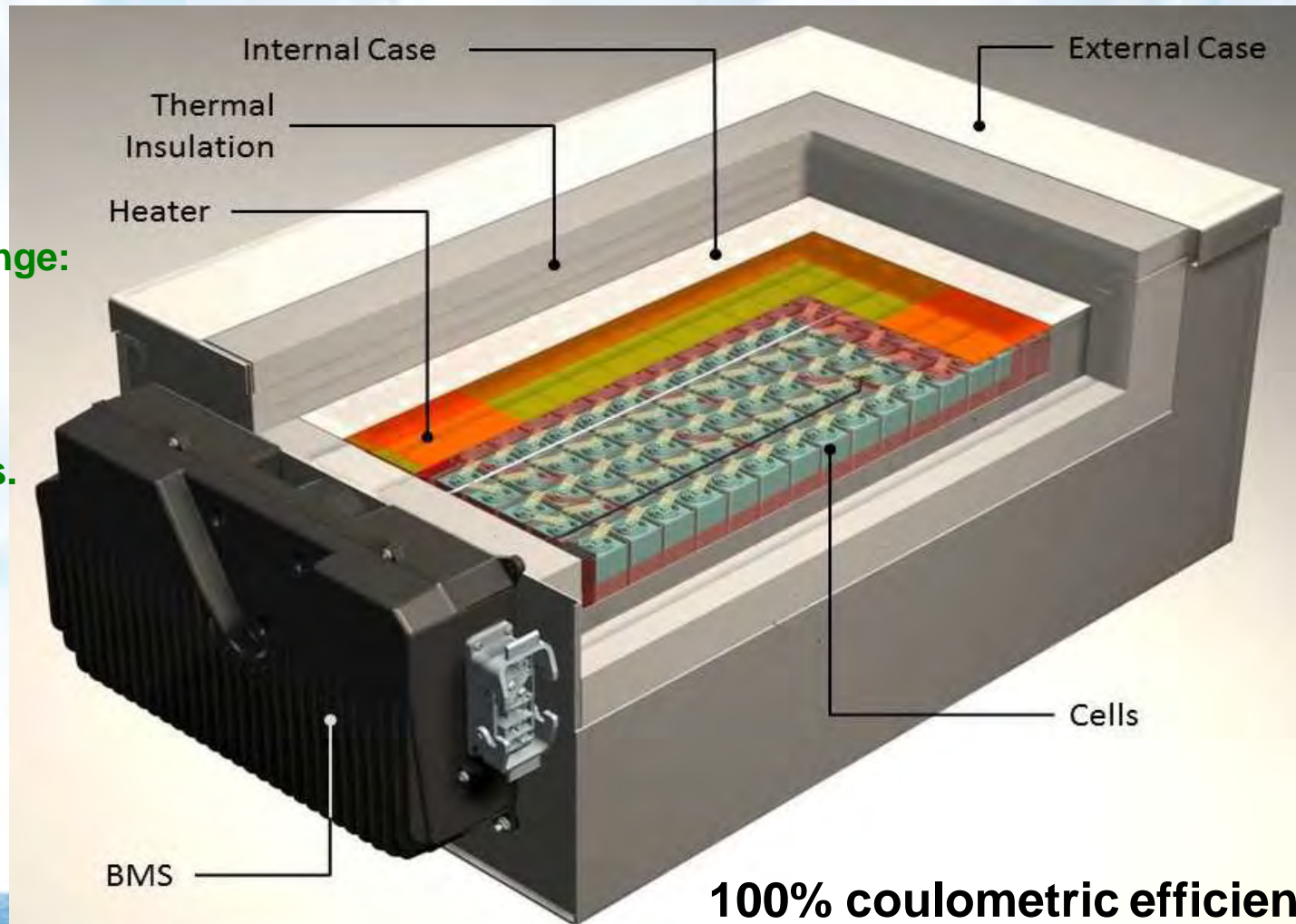
Maintenance free.

BMS included.

Zero ambient emissions.

100% recyclable.

Long Life 4.500 NPC



100% coulometric efficiency

Solution Range

Electrical
Vehicles

Industrial

Energy
Storage



Suitable for any place of installation:

Marine transportation

Harsh environment

Extreme temperature

Safe from physical damage

No hazardous emissions



Seismic Test





Solutions for Energy Storage



Residential Application: GridEdge All-in-One

Residential Energy Storage Solution: safe, compact, flexible. 6kWh upwards

Renewable Sources



SoNick Technology



On Demand



Community & Industrial Application: FIAMM Cabinet

Community Energy Storage Solution: safe, compact, modular. 17 up to 75 kWh



SoNick Technology



Modular Concept



Indoor and Outdoor



MWh System Application: FIAMM Energy Spring

MWh System Energy Storage Solution: scalable, suitable for any place of installation.



Energy Spring 1

Containerized Energy Storage System for outdoor applications comprising of 32-64 ST523 SoNick batteries (up to 1.4 MWh).



Energy Spring 3

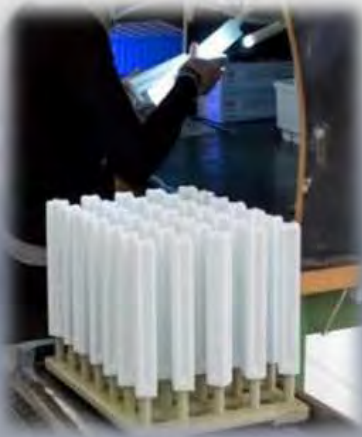
Containerized Energy Storage System for outdoor applications comprising of 12-24 ST523 SoNick batteries (up to 450 kWh).

Turn key solution with switchboard, AC panel, air conditioning, PCS and BMS.



FZSoNick
+ -

Applications and References



SoNick Technology for Energy Backup

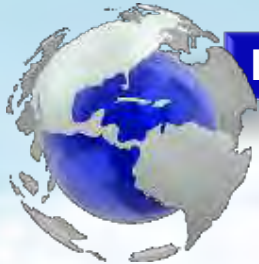
BACK-UP



ELCOS - Hybrid Genset Power Station

BACK-UP

GridEdge
Energy for a sustainable future



Location: Tunisia

UNIT: 2 48TL200 (48V 9,6 kWh). 2 sites

ENERGY: 38,4kWh

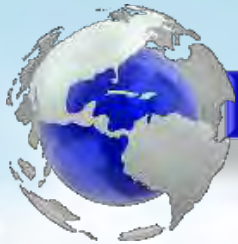
CAPACITY: 800 Ah

- Able to be adapt at any value of load
- Constant performance up to 60° C
- Opex and Capex reduction



With ELCOS

T-MOBILE - Telecom Datacenter



Location: USA

BACK-UP

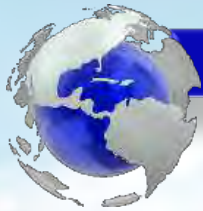
UNIT: 48 48TL200 (48V 9,6 KWh) per site. **17 sites**
ENERGY: 7,8 MWh
CAPACITY: 163200 Ah

With T-mobile

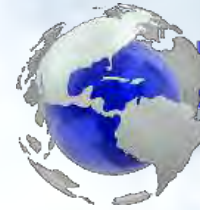
- High Density Facility Design
- Stand-alone System



TELEFONICA and TELECOM ITALIA - BTS On-Grid



Location: Spain



Location: Italy

BACK-UP

UNIT: 2 48TL80 (48V 3,9kWh). 10 sites

ENERGY: 78kWh

CAPACITY: 1600 Ah

UNIT: 2 48TL80 (48V 3,9kWh). 20 sites

ENERGY: 156 kWh

CAPACITY: 3200 Ah

- On-Grid System
- TCO: energy consumption&maintenance
- Extended life and reliability
- Competitive alternative for Peltier cabinet plus AGM technology

- On-Grid System
- TCO: energy consumption&maintenance
- Extended life and reliability
- Remote monitoring

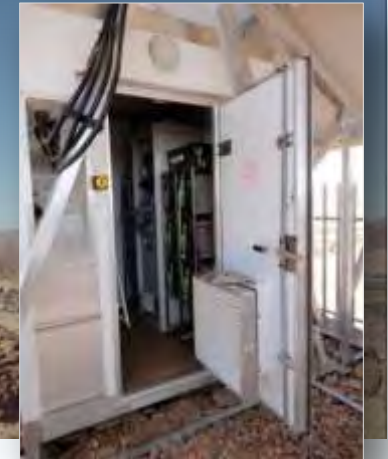
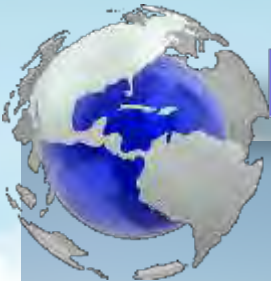
With Telefonica

With Telecom Italia

MTN – BTS Off-Grid

BACK-UP

Location: South Africa



UNIT: 4 48TL80 (48V 3,9kWh). 50 sites

ENERGY: 780kWh

POWER: 16000 Ah

- Off-Grid independent station
- Immunity to extreme temperatures (+ 50° C)
- Pure Solar Site



With MTN





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GridEdge.com.au

1300 474 333



Or Email Us at: info@GridEdge.com.au for more information