

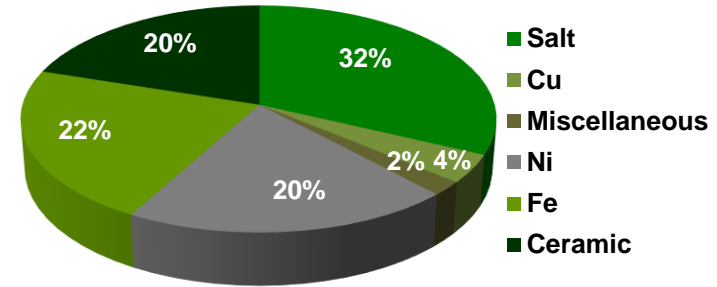
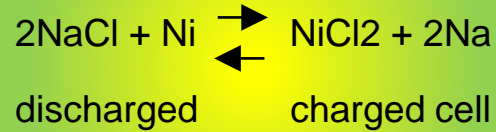


FIAMM



Applicazioni Energy Storage per le smart grid

Intervento di Marco Pigni
(Regulatory Affairs Advisor FIAMM ESS Spa)
Workshop ENEA - Sistemi avanzati di accumulo dell' energia
Roma, 03/07/15



Performances

- ✓ Hot cell (~270°C inside)
- ✓ **Temperature Immunity**
(-40 ÷ +60°C)
- ✓ **Cycling Capability**
> 4.500 cycles
(80% DOD)
- ✓ **Battery energy density**
100÷120Wh/kg
150-190Wh/lt
- ✓ **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**

FIAMM SoNick/ Production



FIAMM SoNick/ Solution Range

Electrical Vehicles

Industrial

Energy Storage



ENERGY STORAGE / Market Value Chain

1 Generation

1

2 Grid Management

2

3 Transmission & Distribution

3



&



4 Retail ("behind the meter")

4

- Commercial
- Residential



5 Off- Microgrid
Micro-Grids

5



smart grid

6 Others (UPS, TLC,...)

6

Out of Scope

Location: Tilos - Greece

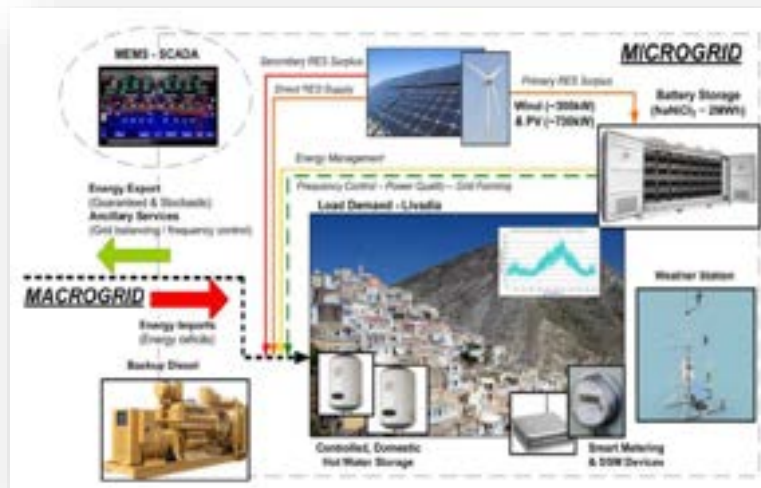


ENERGY STORAGE

UNIT: 2 Energy Spring 164 (128 ST523 620V 23,5kWh)

ENERGY: 2,4 MWh

POWER: 800 KW



- Smart-Grid
- Micro-Grid energy management
- Energy Intensive Services
- Maximization of RES penetration
- Grid stability
- Ancillary services to the main grid of Kos

With Technological Educational Institute of Piraeus (Greece), CEA (France), Younicos (Germany), WWF (Greece), Open Energy (UK) etc. for TILOS Island

FIAMM SoNick/ TILOS project goals

