



“Made in Italy” Lithium cells & high-energy efficient battery solutions

The 1st plant in Italy & Southern Europe for the mass production of lithium cells, modules & battery solutions



- ✓ Full integrated Production Process
- ✓ In house R&D for cells and customized battery solutions
- ✓ Capacity efficiency, Energy Saving and Green battery (LFP chemistry) solutions in Storage, Motive Power and Special applications (Public Transport, Military, Marine)

01

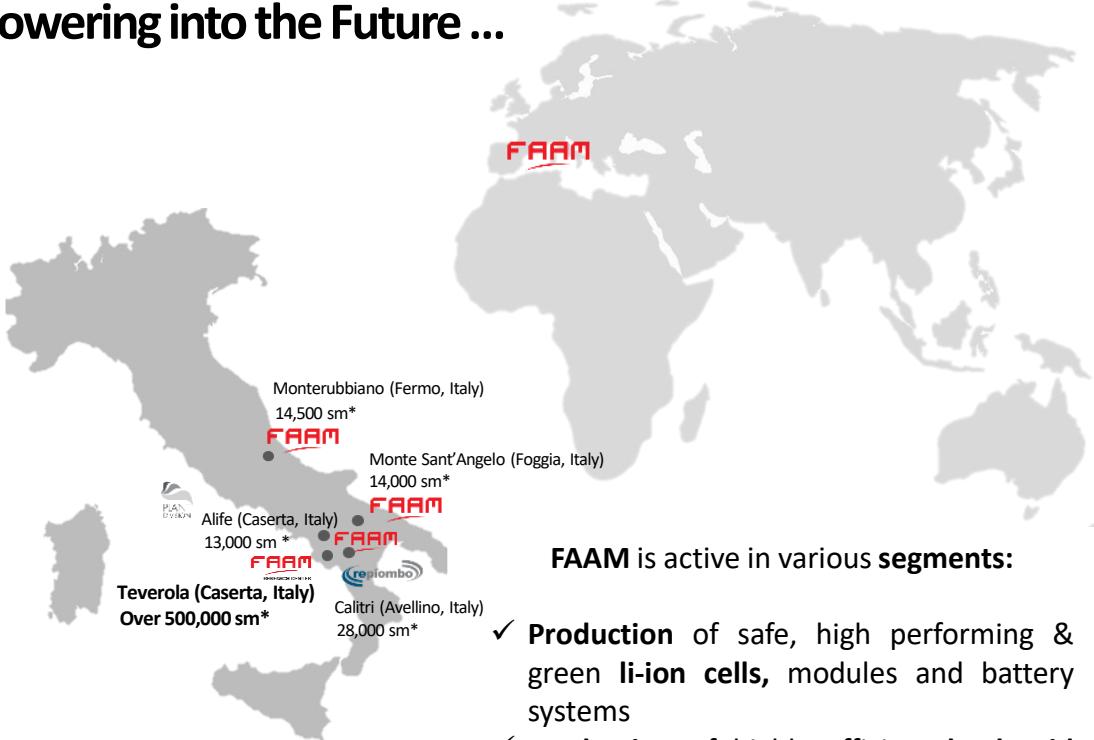
Company Overview

From Lead-acid to Lithium: Powering into the Future ...



FAAM is a subsidiary of **SERI Industrial**, a company listed on Milan's Euronext ("EXM") stock exchange; SERI Industrial is a vertically integrated player along the supply chain of batteries and plastic materials.

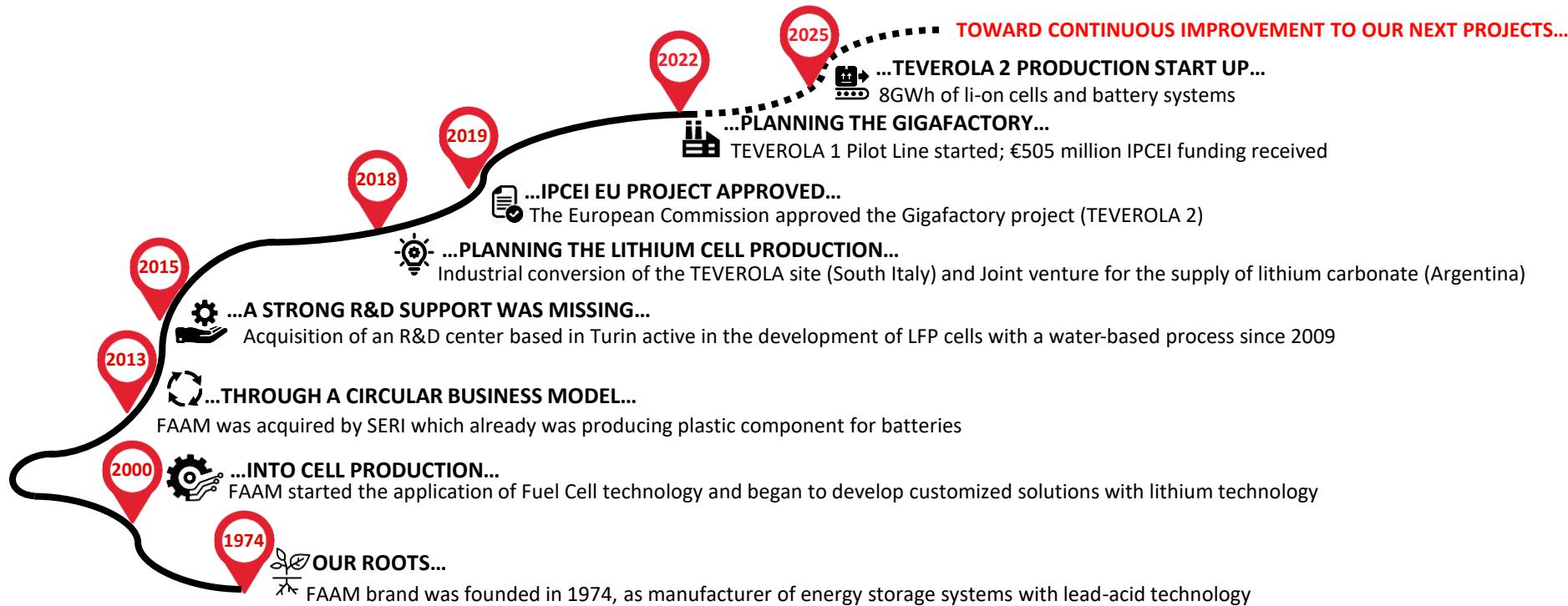
- Employees: > 400/1.000 FTE over next years
- Brand on the market: since 1974
- Investments: >600 M€



FAAM is active in various segments:

- ✓ **Production** of safe, high performing & green li-ion cells, modules and battery systems
- ✓ **Production** of highly efficient lead acid batteries
- ✓ **Recycling** of end-of life batteries, from plant design to recovery of materials
- ✓ **After sales services**





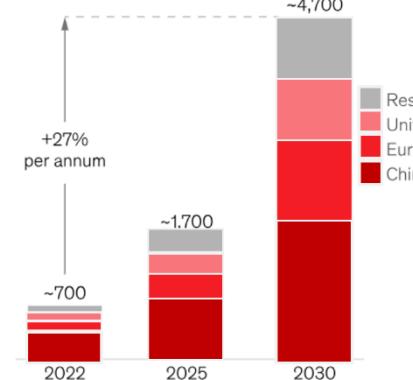


Especially Europe:

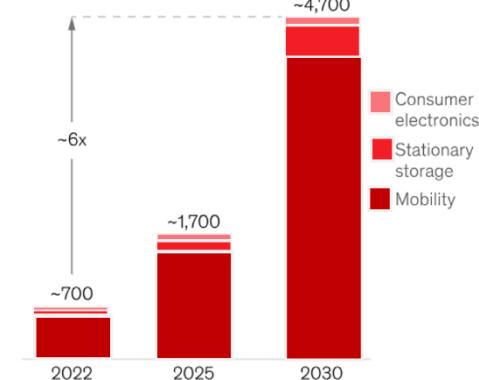
- ✓ Li-Batteries have a **strong share** in the **Green** technologies to meet the EU goal **cutting gas emissions by 55%** before 2030
- ✓ There is a **shortfall in supply**, where there are **few domestic manufacturers (mainly battery assemblers)** in a **high-growing demand context**

Global Li-ion battery cell demand, GWh, Base case

By region



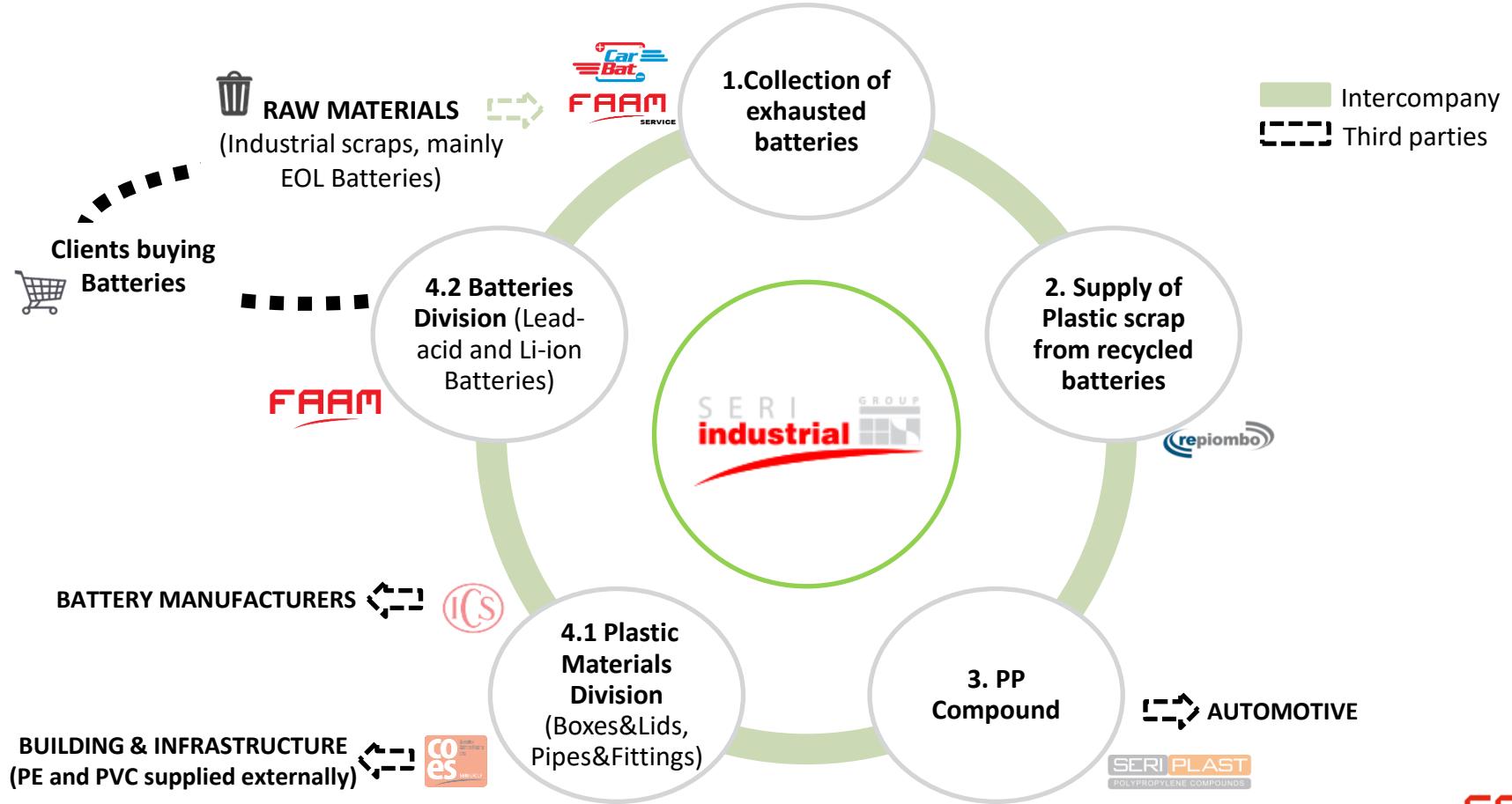
By sector



Including passenger cars, commercial vehicles, two-to-three wheelers, off-highway vehicles, and aviation.
Source: McKinsey Battery Insights Demand Model

McKinsey & Company

/01 Lead-acid as fully integrated production into the Group Circular Economy



/01 Lead-acid product portfolio



Starter Power



Power Technology



Energy Technology



Heavy Plus Technology



Motorcycles Battery



Motive Power



Top Endurance
>1.820 lifecycles



Tubular Traction Maxi
>1.600 lifecycles



Tubular Traction Star
>1.500 lifecycles



TraLeg - Heavy Plus
Technology



Stand-by power



FLOODED



VRLA GEL



VRLA AGM



02

Lithium summary



The 1stproducer of Lithium cells and battery solutions in Southern Europe



100% made in Italy



100% Cobalt free



95% target **recyclable**
quantity in % of spent battery

4 Pillars:

LFP technology as CAM

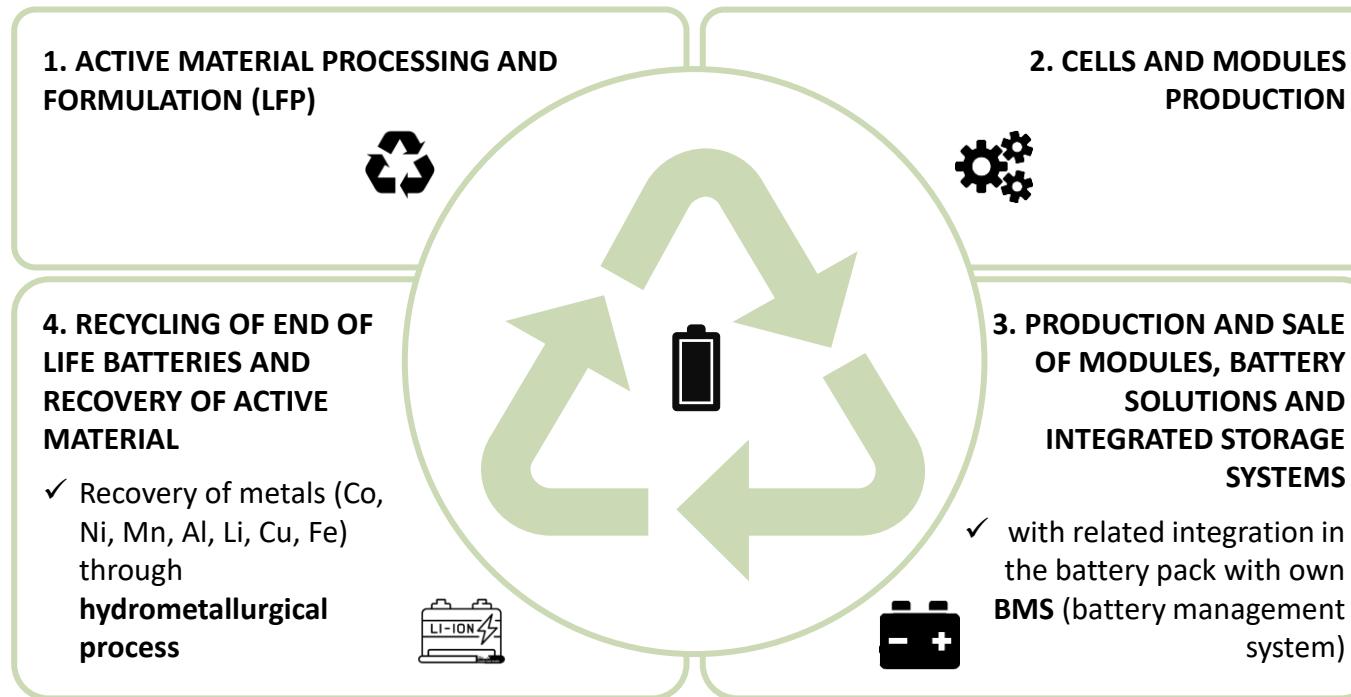
Water-based solution in the electrode production (instead of organic solvents)

Customized battery with the in-house development of the BMS and converters

Recycling at end-of-life of active materials through a clean hydro-process



From R&D activities to the first production line TEVEROLA 1 and the Mediterranean Gigafactory TEVEROLA 2



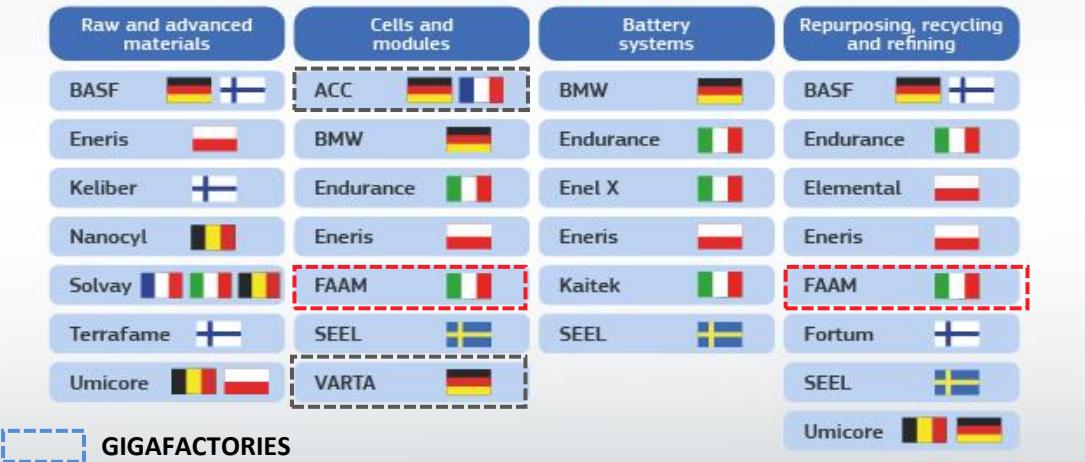
✓ **Cells production** based on sustainable cathodes and anodes to produce **safe, high performing and green** lithium-ion electrodes

✓ New technologies development such as **sodium-ion** and **ASSB** (all solid-state batteries).

FAAM success story as 'Made in Italy' booming EU position, creating independency from Asia



Commission approves €3.2 billion support by seven Member States for project of common European interest for **battery value chain**



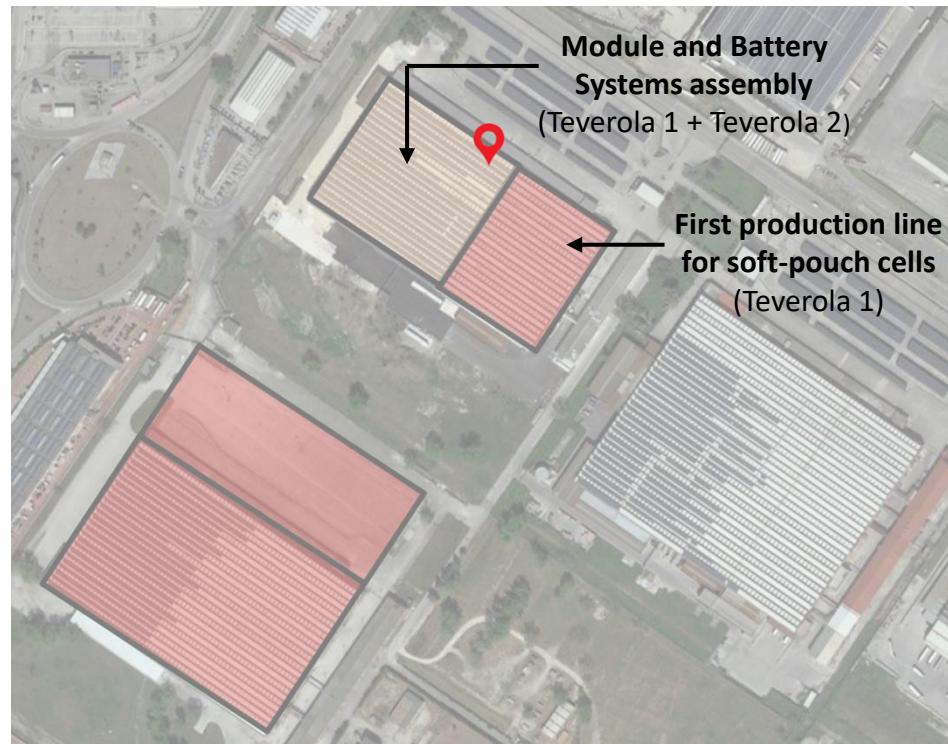
More info at: www.ipcei-batteries.eu



- Member States: Belgium, Finland, France, Germany, Italy, Poland and Sweden
- Integrated project comprising 4 workstreams, covering the battery value chain
- 17 undertakings (some active in more than one Member State) will receive State aid
- 505 M€ assigned to FAAM

A EUROPEAN BATTERY VALUE CHAIN

/02 A dedicated R&D Laboratory co-located with production



➡ Coin cell to multi-layer pouch cell – dedicated roll to roll coater and semi-automated cell assembly

↔ 1200m² including 500m² dry room

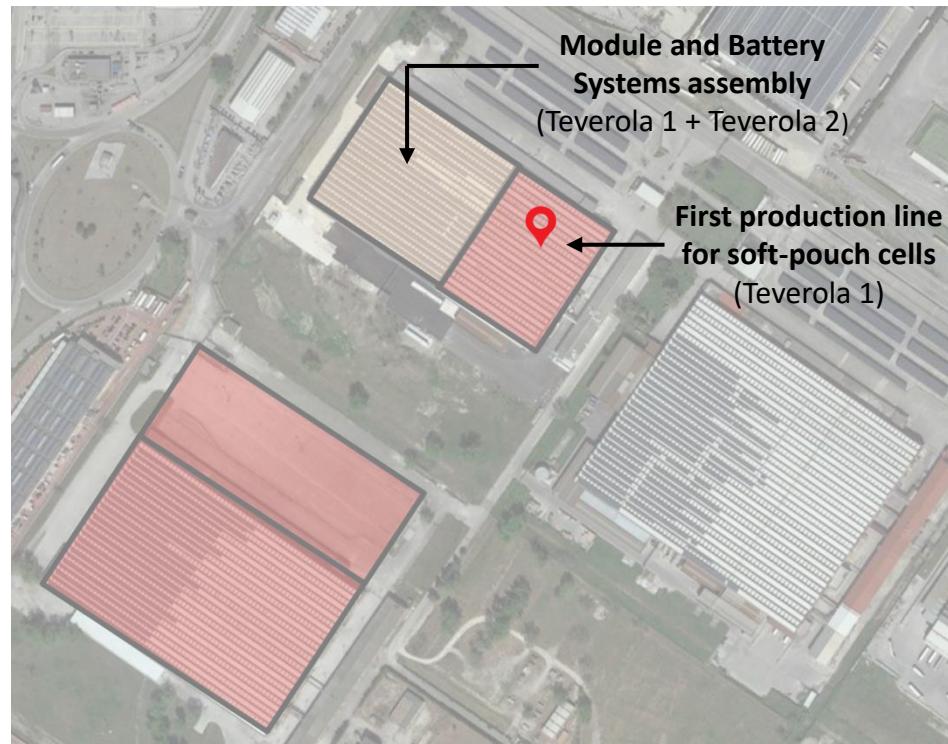
👤 20-25 employees

⚙️ **Main activities:** Synthesis - Formulation/Processing - Characterisation – Electrochemistry – Modelling - Recycling

----- Additional features -----

- ✓ 300+ channels for electrochemical testing
- ✓ State of the art **characterisation equipment**
- ✓ **Alternative processing** equipment

/02 TEVEROLA 1 : a strategic production line ...



Capacity: 0.3 GWh



Cell Format: Soft Pouch



Technology: LFP soft pouch (50Ah), high energy density and safe applications with integrated BMS. Water based solutions

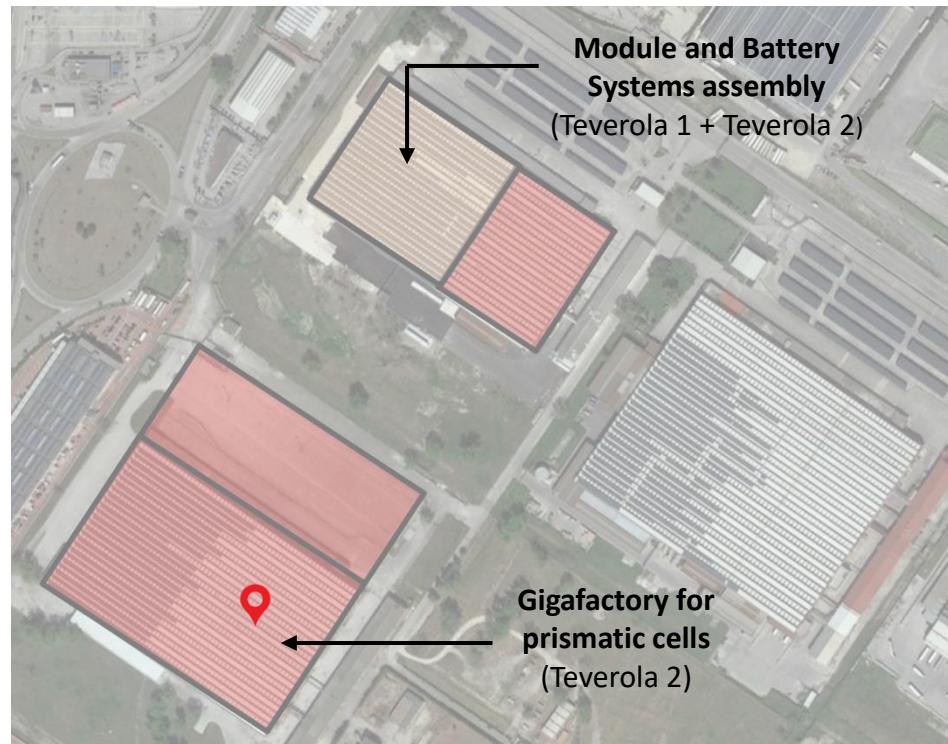
----- Additional details -----

- ✓ **70 Mln euro Investments**
- ✓ operating **from 2023**, aimed through full capacity ramp up **by the end of 2024**
- ✓ Applications: **Energy Storage Systems - Motive Power - Public transport - Naval and Defense**



FAAM - Energy Saving Battery su LinkedIn: FAAM - Teverola (CE) Plant

/02 TEVEROLA 2: an innovative Gigafactory integrated by a Recycling pilot Plant



 Capacity: 8 GWh

 Cell Format: Prismatic

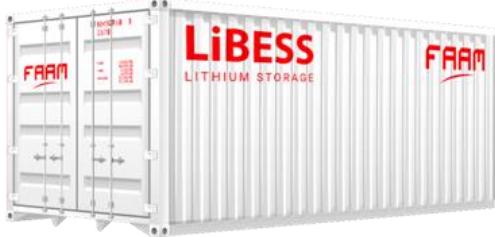
 Technology: LFP cells with graphite anodes and R&D on generation 4 (solid state) + sodium-ion

Additional details

- ✓ 50 ton/day of battery treatment in the recycling pilot line
- ✓ +505 M€ of investments (fully funded through EU IPCEI project)
- ✓ Production expected to start by 2026
- ✓ Applications: Energy Storage Systems - Motive Power – E-bus and special applications

/02 Storage applications

Battery Energy Storage Systems



- Tailor made projects: unlimited configurations opportunities
- Turnkey solution opportunity
- Remote service available
- High safety level

- ✓ Up to **8,25 MWh** per 40' container/walkin
- ✓ **10 to 100KWh** per rack
- ✓ From **100 to 2000Ah** (50 to 1000V for customized ones)

Commercial / Industrial Storage



LiRACK

Cabinet Standard Rack 19"

- Tailor made projects: unlimited configurations opportunities
- Plug & Play solution
- Remote service available
- High safety level

- ✓ **10 to 100KWh** per rack
- ✓ From **100 to 2000Ah** (50 to 1000V for customized ones)

Domestic Storage



LiHOME

- Wi-Fi communication on both IOS or Android App (on request)
- Plug & Play solution (online download via QR code)
- Stand-alone solution
- Wall or floor installation (stackable/ side by side)
- Energy saving: efficiency > 98 %

- ✓ Wide range of installable energy capacity (pitch 4/5 Kwh)
- 4,09Kwh LiHome
8,19Kwh LiHome

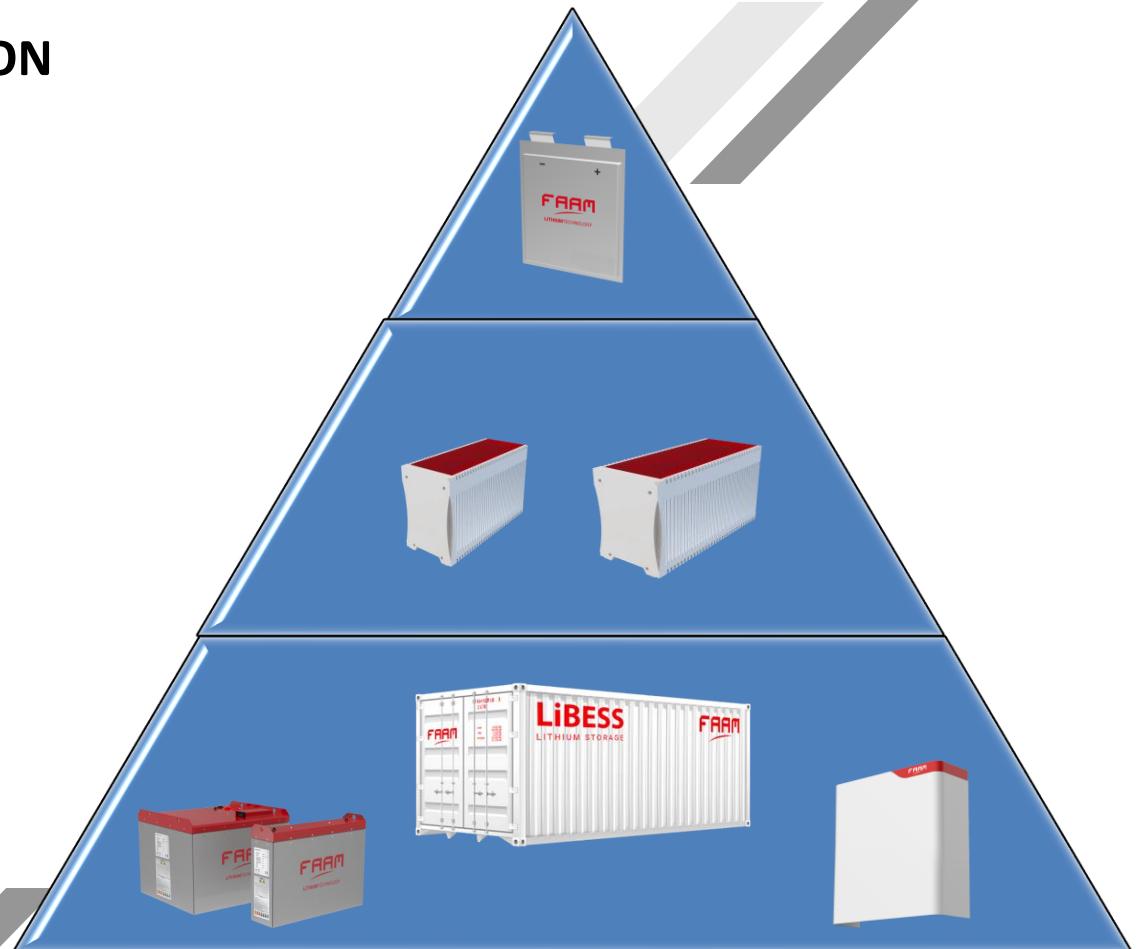
/02 FULL VERTICAL PRODUCTION

FROM CELL 2 CONTAINER / FULL RESIDENTIAL
SYSTEM - 100% MADE in ITALY

BMS 100% INTERNAL DESIGN & DEVELOPMENT:

INTERNAL R&D DEPT.

- ✓ Internal R&D Team
- ✓ Internal Chemical Laboratory
- ✓ Internal Electric Laboratory





Tailor made projects: unlimited configurations opportunities; customized design



Plug & Play solution



Remote service available



High safety level (LFP for safety reasons)



Communication Interface



Lifecycles: > 4.000 cycles (DOD 80%) – 13.000 work hours



Energy saving: **efficiency > 98 %**

- ✓ **Wide Nominal Range:** 24V / 48V / 80V / 96V
- ✓ **Wide Capacity range:** from 100 to 1000 Ah
- ✓ **Fast Charging:** up to 80% in 30 minutes, activated by power key on the UI
- ✓ **Meet IP54 protection**



Storage – Value



Product

- **Made in Italy;**
- **Modularity:** FAAM products are modular in order to offer innovative and high performances solutions;
- **Flexibility:** Customization available as FAAM controls the full system from the raw material level, something not provided by assemblers or Non-EU suppliers;
- **Wide range of products;**
- **Maintenance free;**
- **Compact Design;**
- **Plug and play installation – even floor or wall mounted;**
- **Remote management** with Android – IOS – WEB FAAM App;

Storage – Value



Sustainability

- Unique Lithium Battery Manufacturer in Italy from the scratch;
- Unique LFP cell and Battery Manufacturer at industrial level in Europe;
- **Delivery ensured**: all the delivery in EMEA is guaranteed whatever geo-political situation;
- **Vertical Production**;
- **100% internal know-how**;
- **European Supply Chain (IPCEI)**: Mediterranean Gigafactory;
- **Recycle**: with >85% of total recovery of the full Battery, the first in South Europe – available in 4 years;
- **Eco-Sostenibily**

Storage – Value



Safety

- “Water based” production process: minor ecological impact / easiest recyclability;
- Water based System – Significantly safer batteries than classic LFPs that use flammable organic solvents;



After Sales / Service

- Technical support always available : both on the field or by remote connection, in short time;



Evolution

- What only a Cell manufacturer can provide:
 - Customization;
 - Digital Twin at cell level (under development);
 - DIS, BMS control of the battery with EES models (under development);

Strengths



Fast charging (up to 80% in 30 min) activated by a touch button on the UI



Wide Energy range: 24V-48V-80V-96V nominal voltage range. From 100Ah to 1000 capacity range



Meet **IP54** protection



Lifecycles: **> 4.000 cycles** (DOD 80%)



Energy saving: **efficiency > 98 %**



LFP for high more safety technology



Zero emission



Communication Interface



Plug and play whatever charge or discharge phase



/02 Other applications

Military Applications



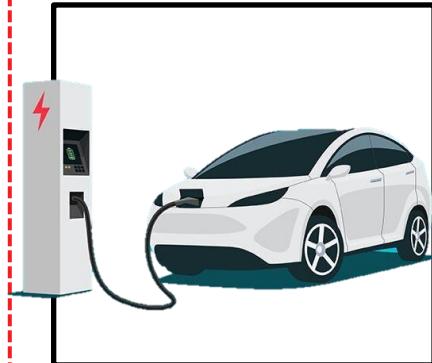
Naval



Public Transport



Charging Stations



Experiences **since 2011**



6T Li-ion project FAAM lithium battery solutions dedicated to military vehicles 410 Wh/dm³



World's first submarine (U212 class) powered by lithium batteries with **high-safety LFP cylindrical cells**



A variety of solutions for maneuvering and mooring in the naval fields: **Energy storage, Mooring, Access, Decarbonisation, Dynamic anchoring**



Experiences **since 2008**



Revamping: Conversion of buses equipped with Euro 0-1-2 engines into hybrid motorization
Realization of an all-in-house platform manufactured with fabric composites



From a single tower to a multi-connected service station



Standard or high-power charging hubs, that can be installed at dedicated stations or at home.



“Made in Italy” Lithium cells & high-energy efficient battery solutions



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LinkedIn

FAAM – Energy Saving Battery

THANKS FOR YOUR KIND ATTENTIONS

