



FAAM



“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



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.



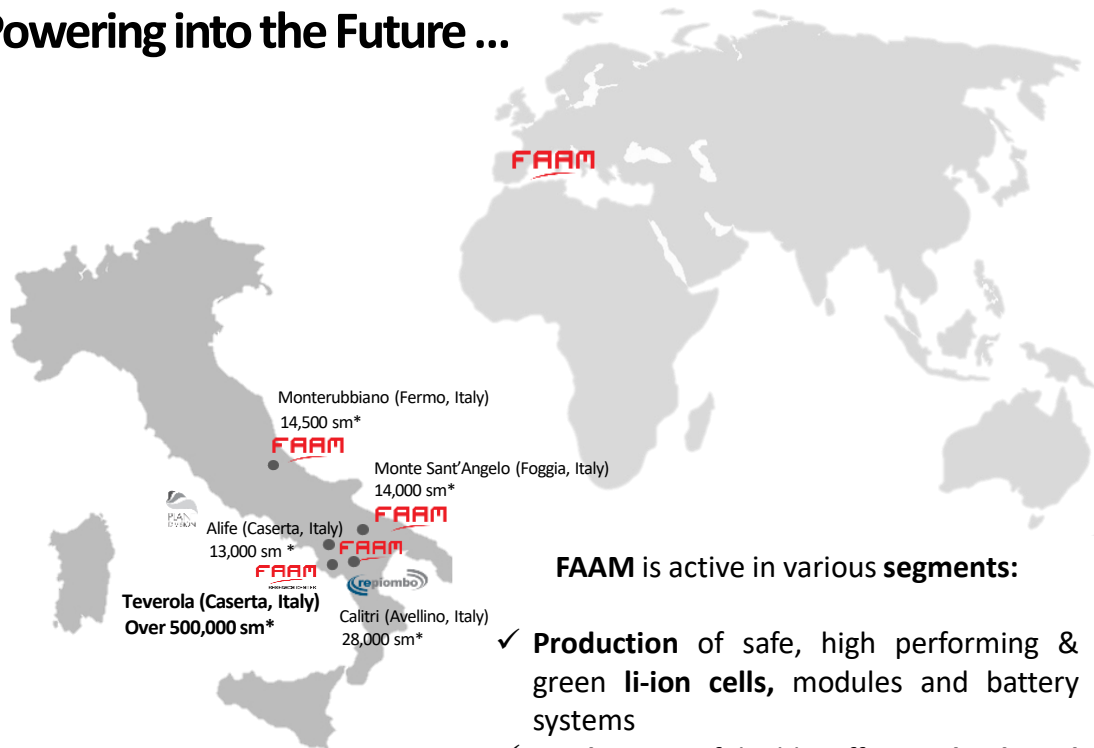
Employees: > 400/1.000 FTE over next years



Brand on the market: since 1974



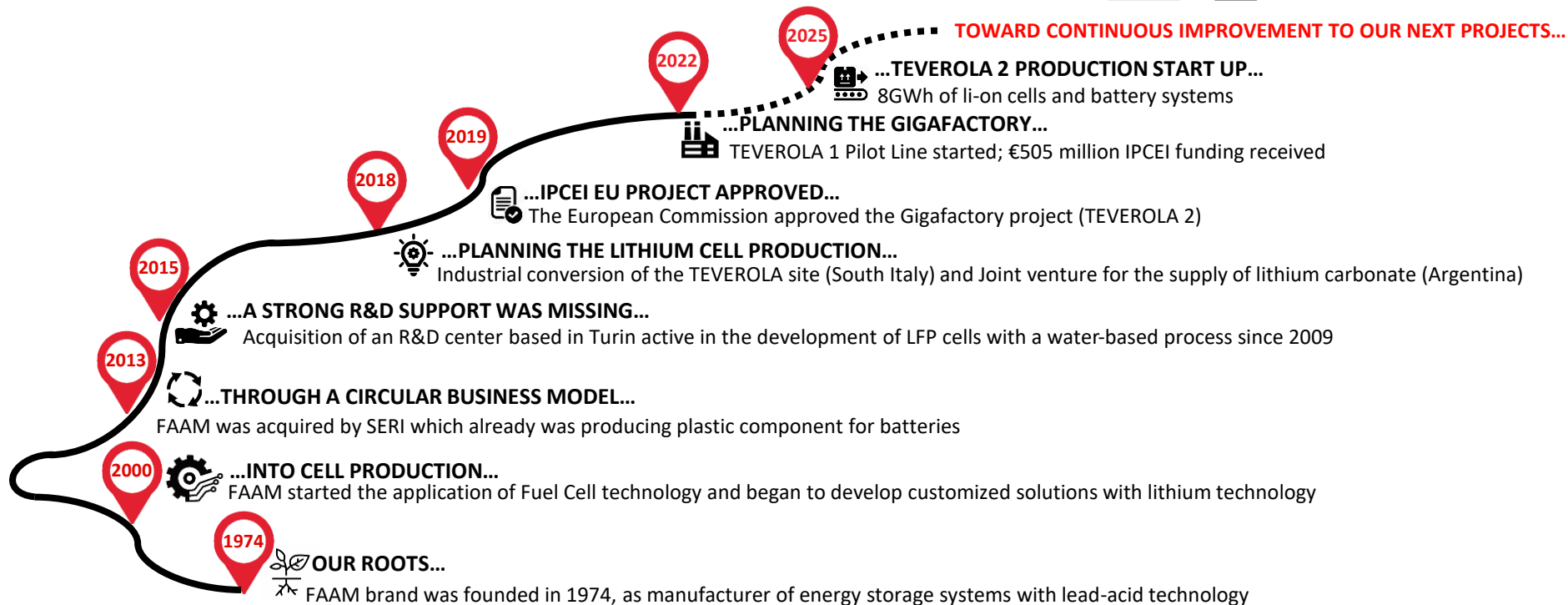
Investments: >600 M€



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**





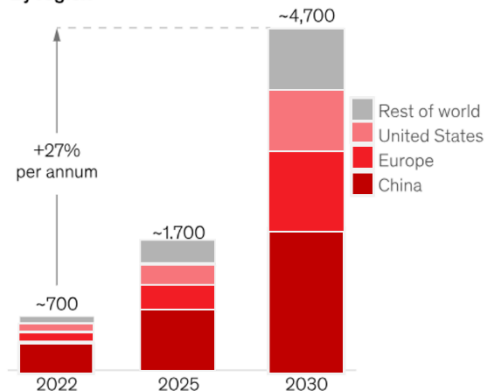


Especially Europe:

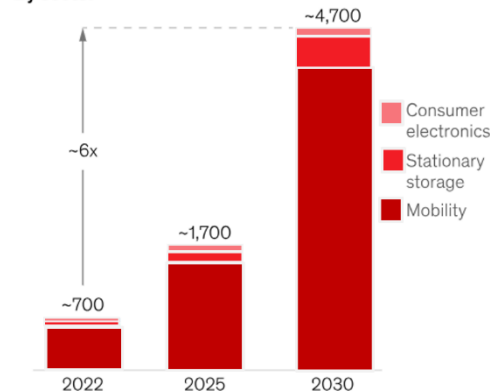
- ✓ **Li-Batteries** have a **strong share** in the **Green** technologies to meet the EU goal **cutting gas emissions by 55%** before 2030
- ✓ There is a **shortfall in supply**, where there are **few domestic manufacturers (mainly battery assemblers)** in a **high-growing demand context**

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

By region



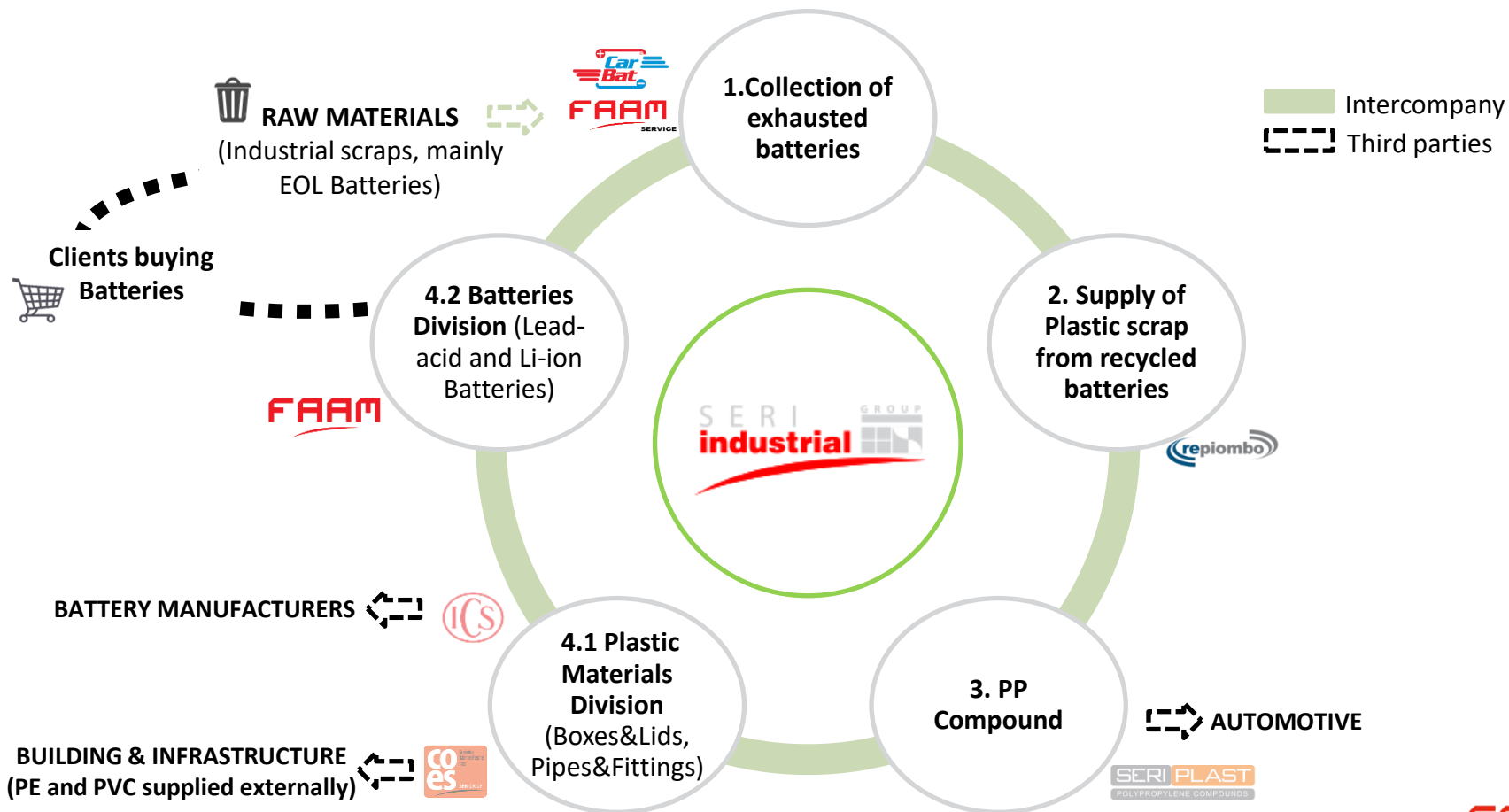
By sector



¹Including 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





Starter Power



Power Technology



Energy Technology



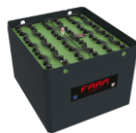
Heavy Plus Technology



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 1st producer 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)

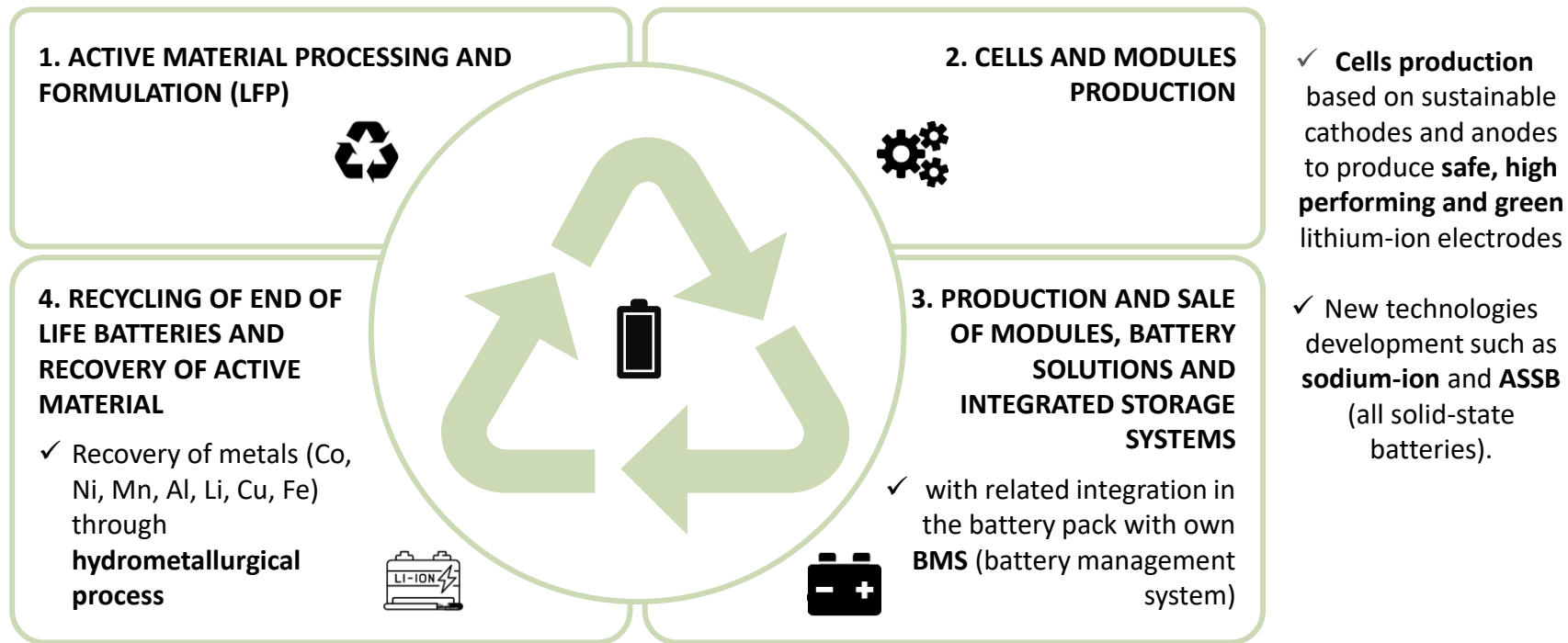
Customized battery with the in-house development of the BMS and converters

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





































The FAAM loop, leveraging the already established Vertical Integration of the Group



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**

Raw and advanced materials	Cells and modules	Battery systems	Repurposing, recycling and refining
BASF  	ACC  	BMW 	BASF  
Eneris 	BMW 	Endurance 	Endurance 
Keliber 	Endurance 	Enel X 	Elemental 
Nanocyl 	Eneris 	Eneris 	Eneris 
Solvay    	FAAM 	Kaitek 	FAAM 
Terrafame 	SEEL 	SEEL 	Fortum 
Umicore  	VARTA 		SEEL 
			Umicore  

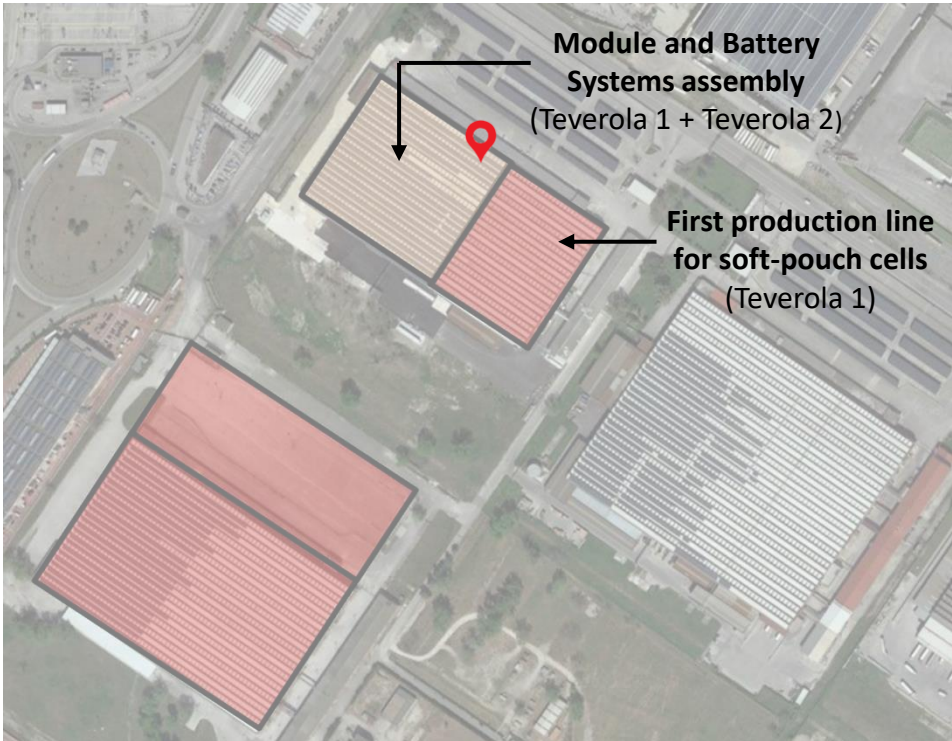
GIGAFACTORIES



- 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

More info at: www.ipcei-batteries.eu



**Module and Battery
Systems assembly**
(Teverola 1 + Teverola 2)

**First production line
for soft-pouch cells**
(Teverola 1)



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

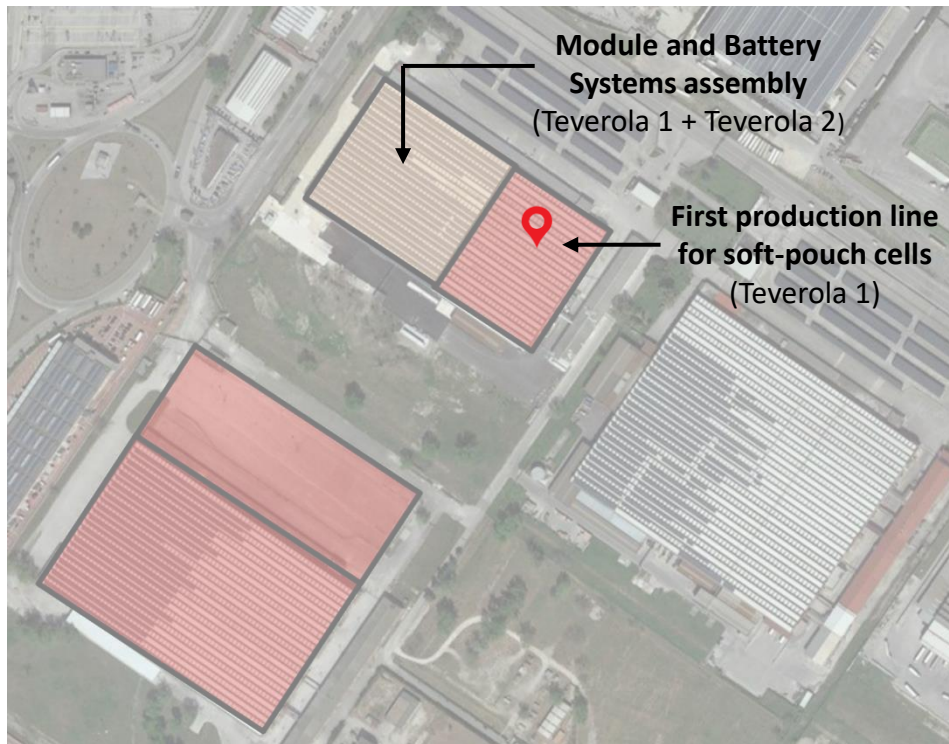


Main activities: Synthesis - Formulation/Processing - Characterisation – Electrochemistry – Modelling - Recycling

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**



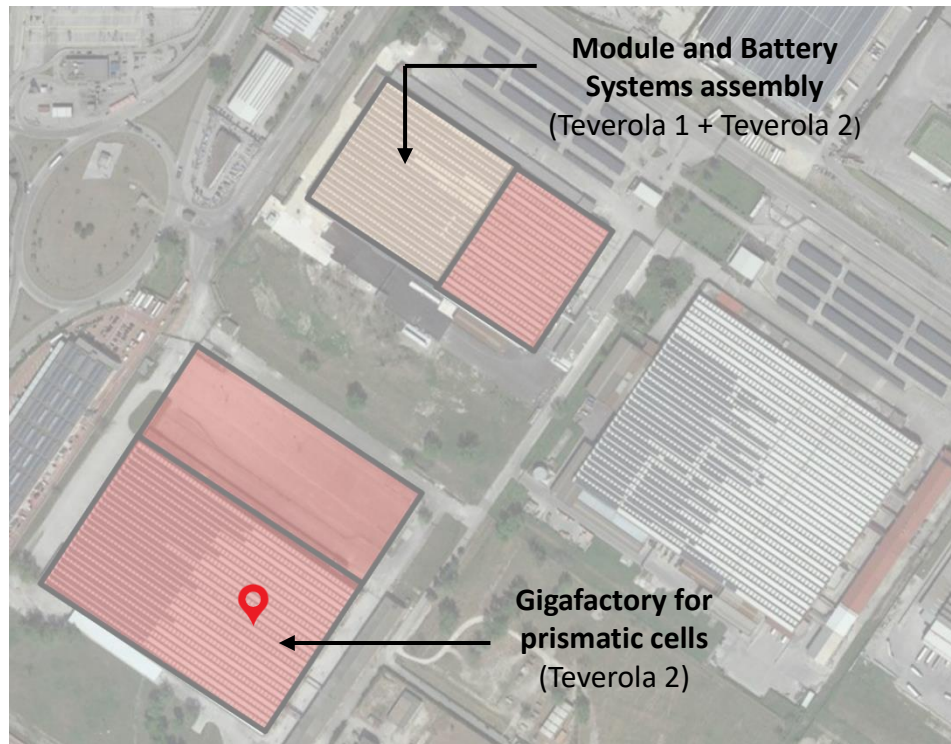
Technology: **LFP soft pouch (50Ah)**, high energy density and safe applications with **integrated BMS. Water based solutions**


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**




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

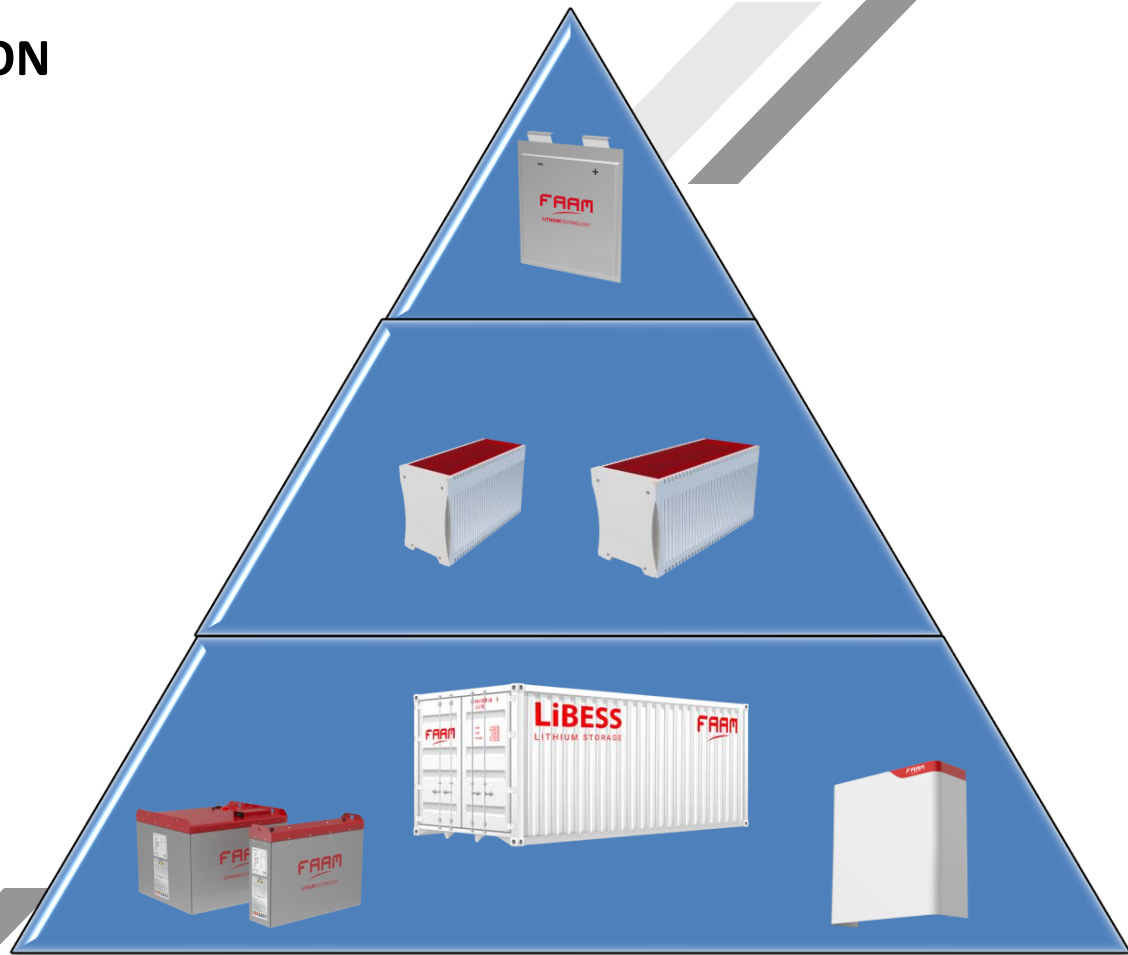
02 FULL VERTICAL PRODUCTION

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



02 Motive power



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

LiTRACTION



Storage – Value



Product

- **Made in Italy;**
- **Modularity:** FAAM products are modular in order to offer innovative and high performances solutions;
- **Flessibility:** Customization available as FAAM controls the full system from the raw material level, something not provide from 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-Sostenibly**

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%)



LFP for high more safety technology



Communication Interface



Energy saving: **efficiency > 98 %**



Zero emission



Plug and play whatever charge or discharge phase



02 Other applications

Military Applications



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**

Naval



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

Public Transport

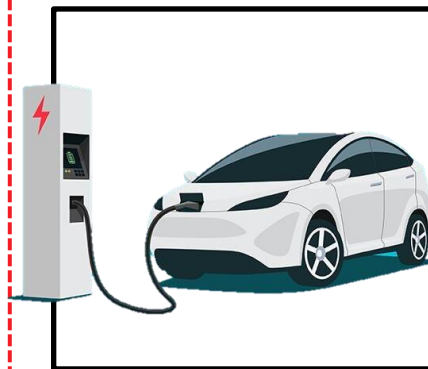


Experiences **since 2008**



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

Charging Stations



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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FAAM – Energy Saving Battery

THANKS FOR YOUR KIND ATTENTIONS

